API Well Number: 43013532680000

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 3

AMENDED REPORT ☐

## APPLICATION FOR PERMIT TO DRILL

| | |
|---|---|
| **1. WELL NAME and NUMBER**<br>Karren Trust 4-30C4 | |
| **2. TYPE OF WORK**<br>DRILL NEW WELL ● REENTER P&A WELL ○ DEEPEN WELL ○ | **3. FIELD OR WILDCAT**<br>ALTAMONT |
| **4. TYPE OF WELL**<br>Oil Well Coalbed Methane Well: NO | **5. UNIT or COMMUNITIZATION AGREEMENT NAME** |
| **6. NAME OF OPERATOR**<br>EP ENERGY E&P COMPANY, L.P. | **7. OPERATOR PHONE**<br>713 997-5038 |
| **8. ADDRESS OF OPERATOR**<br>1001 Louisiana, Houston, TX, 77002 | **9. OPERATOR E-MAIL**<br>maria.gomez@epenergy.com |
| **10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)**<br>Fee<br>**11. MINERAL OWNERSHIP**<br>FEDERAL ○ INDIAN ○ STATE ○ FEE ● | **12. SURFACE OWNERSHIP**<br>FEDERAL ○ INDIAN ○ STATE ○ FEE ● |
| **13. NAME OF SURFACE OWNER (if box 12 = 'fee')**<br>Glen A. Karren Family Living Trust | **14. SURFACE OWNER PHONE (if box 12 = 'fee')**<br>435-823-6355 |
| **15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')**<br>PO Box 170, , | **16. SURFACE OWNER E-MAIL (if box 12 = 'fee')** |
| **17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')**<br>**18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS**<br>YES ○ (Submit Commingling Application) NO ● | **19. SLANT**<br>VERTICAL ● DIRECTIONAL ○ HORIZONTAL ○ |

| 20. LOCATION OF WELL | FOOTAGES | QTR-QTR | SECTION | TOWNSHIP | RANGE | MERIDIAN |
|---|---|---|---|---|---|---|
| LOCATION AT SURFACE | 763 FNL 1733 FEL | NWNE | 30 | 3.0 S | 4.0 W | U |
| Top of Uppermost Producing Zone | 763 FNL 1733 FEL | NWNE | 30 | 3.0 S | 4.0 W | U |
| At Total Depth | 763 FNL 1733 FEL | NWNE | 30 | 3.0 S | 4.0 W | U |

| | | |
|---|---|---|
| **21. COUNTY**<br>DUCHESNE | **22. DISTANCE TO NEAREST LEASE LINE (Feet)**<br>769 | **23. NUMBER OF ACRES IN DRILLING UNIT**<br>80 |
| | **25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)**<br>2200 | **26. PROPOSED DEPTH**<br>MD: 11600 TVD: 11600 |
| **27. ELEVATION - GROUND LEVEL**<br>5804 | **28. BOND NUMBER**<br>400JU0708 | **29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE**<br>Duchesne City |

### Hole, Casing, and Cement Information

| String | Hole Size | Casing Size | Length | Weight | Grade & Thread | Max Mud Wt. | Cement | Sacks | Yield | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| Surf | 12.25 | 9.625 | 0 - 2000 | 40.0 | N-80 LT&C | 0.0 | Type V | 412 | 2.36 | 12.0 |
| | | | | | | | Class G | 195 | 1.3 | 14.3 |
| I1 | 8.75 | 7 | 0 - 8450 | 29.0 | HCP-110 LT&C | 10.2 | Class G | 590 | 1.91 | 12.5 |
| | | | | | | | Class G | 298 | 1.64 | 13.0 |
| L1 | 6.125 | 5 | 8250 - 11600 | 18.0 | HCP-110 LT&C | 12.0 | Class G | 199 | 14.2 | 1.52 |

### ATTACHMENTS

**VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES**

| | |
|---|---|
| ☑ WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER | ☑ COMPLETE DRILLING PLAN |
| ☑ AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE) | ☐ FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER |
| ☐ DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED) | ☑ TOPOGRAPHICAL MAP |

| | | |
|---|---|---|
| **NAME** Maria S. Gomez | **TITLE** Principal Regulatory Analyst | **PHONE** 713 997-5038 |
| **SIGNATURE** | **DATE** 02/12/2015 | **EMAIL** maria.gomez@epenergy.com |

**API NUMBER ASSIGNED**
43013532680000

**APPROVAL**

Permit Manager



RECEIVED: March 12, 2015

**Karren Trust 4-30C4**
**Sec. 30, T3S, R4W**
**DUCHESNE COUNTY, UT**

**EP ENERGY E&P COMPANY, L.P.**

**DRILLING PROGRAM**

1. **Estimated Tops of Important Geologic Markers**

| Formation | Depth |
|---|---|
| Green River (GRRV) | 3,673' TVD |
| Green River (GRTN1) | 4,361' TVD |
| Mahogany Bench | 5,228' TVD |
| L. Green River | 6,521' TVD |
| Wasatch | 8,381' TVD |
| T.D. (Permit) | 11,600' TVD |

2. **Estimated Depths of Anticipated Water, Oil, Gas or Mineral Formations:**

| Substance | Formation | Depth |
|---|---|---|
| | Green River (GRRV) | 3,673' MD / TVD |
| | Green River (GRTN1) | 4,361' MD / TVD |
| | Mahogany Bench | 5,228' MD / TVD |
| Oil | L. Green River | 6,521' MD / TVD |
| Oil | Wasatch | 8,381' MD / TVD |

3. **Pressure Control Equipment:** (Schematic Attached)

A Diverter Stack on structural pipe from 40' MD/TVD to 2,000' MD/TVD. A 10M BOP stack w/ rotating head, spacer spool, 5M annular, flex rams, blind rams & single w/ flex rams used from 2,000' MD/TVD to 8,450' MD/TVD. A 10M BOP stack w/ rotating head, spacer spool, 5M annular, flex rams, blind rams & single w/ flex rams from 8,450' MD/TVD to TD (11,600' MD /TVD).

The BOPE and related equipment will meet the requirements of the 5M and 10M system.

We have pre-set numerous wells around the proposed location and had no issues. The closest well is the Moon 3-30C4 which we Spud September of 2014 which is in the same section & less than ½ mile away. We got 60 bbls of cement back on the surface job & had full returns on the intermediate and liner cement jobs. I will design this proposed well the same way we designed the Moon 3-30C4.

There are 19 water wells within 10,000' of the proposed location but none of them are within 0.75 miles. This wellbore design is the same as the Moon 3-30C4.



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There is 1 SWD well within 2.5 miles of the proposed location but none of them are within 1 mile. No pressure communication is expected to be seen, however it is important to be aware of them.

**The Blue Bench 1-13C5 SWD is 11,418' or 2.16 miles to the North / North West of the proposed location.** It is owned by Intercept Energy & is an active SWD well. It is injecting into the Upper/Middle Green River & Upper-most Lower Green River. The injection interval is from 4106'-7528'. The injection rate is now ~500 bbls/day @ 500-600 psi (I just got off the phone with Keith who is with Intercept Energy). The pressure dissipates to 300 psi while down on maintenance. Using 300 psi, the EMW @ 4106' is 10.01 ppg. We should not see any pressure from this well since it is Due South of the proposed location. We have drilled as close as 0.98 miles to this SWD well (that well is between the SWD & this proposed location) & **on fracture orientation** and have not seen any pressure while drilling**. If any pressure communication is seen, we can easily weight up to 10.1 ppg MW to control the wellbore. Our intermediate cement design will be 12.5 ppg lead & 13 ppg tail. We will also pump at least a 11.0 ppg weight spacer. We will also bring the cement up to surface instead of 500' into the shoe.**



**OPERATORS MINIMUM SPECIFICATIONS FOR BOPE:**

The surface casing will be equipped with a flanged casing head of 5M psi working pressure. An 11" 5M x 11" 10M spool, 11" x 10M psi BOP and 5M psi annular will be nippled up on the surface casing and tested to 250 psi low test / 3,000 psi high test for 10 minutes each prior to drilling out. The surface casing will be tested to 1,000 psi. for 30 mins. Intermediate casing will be tested to the greater of 1,500 psi or 0.22 psi/ft. The choke manifold equipment, upper Kelly cock and floor safety valves will be tested to 5M psi. The annular preventer will be tested to 250 psi low test / 4,000 psi high test. The 10M BOP will be installed with rotating head, spacer spool, 5M annular, flex rams, blind rams & single w/ flex rams from surface shoe to TD. The BOPE will be hydraulically operated.

In addition, the BOP equipment will be tested after running intermediate casing, after any repairs to the equipment and at least once every 30 days. Pipe and blind rams will be activated on each trip, annular preventer will be activated weekly and weekly BOP drills will be held with each crew.

**Statement on Accumulator System and Location of Hydraulic Controls:**

Precision Rig # 406 is expected to be used to drill the proposed well. Operations will commence after approval of this application. Manual and/or hydraulic controls will be in compliance with 5M and 10M psi systems.

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**Auxiliary Equipment**:

A) Pason Gas Monitoring 2,000' - TD
B) Mud logger with gas monitor – 2,000' to TD (11,600' MD/TVD)
C) Choke manifold with one manual and one hydraulic operated choke
D) Full opening floor valve with drill pipe thread
E) Upper and lower Kelly cock
F) Shaker, de-sander and centrifuge

4. **Proposed Casing & Cementing Program:**

Please refer to the attached Wellbore Diagram.
All casing will meet or exceed the following design safety factors:

- Burst = 1.00
- Collapse = 1.125
- Tension = 1.2 (including 100k# overpull)

Cement design calculations for intermediate and production hole will be based on minimum 10% excess over gauge hole volumes. Actual volumes pumped will be a minimum of 10% excess over caliper volume to designed tops of cement for any section logged. A minimum of 50% excess over gauge volume will be pumped on surface casing.



5. **Drilling Fluids Program:**

Proposed Mud Program:

| Interval | Type | Mud Weight |
|---|---|---|
| Surface | Air | Air |
| Intermediate | WBM | 9.3 – 10.2 |
| Production | WBM | 10.5 – 12.0 |

Anticipated mud weights are based on actual offset well bottom-hole pressure data. Mud weights utilized may be somewhat higher to allow for trip margin and to provide hole stability for running logs and casing.

Visual mud monitoring equipment will be utilized.

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6. **Evaluation Program**:

   Logs:
   Mud Log: 2,000' MD/TVD – TD (11,600' MD/TVD)
   Open Hole Logs: Gamma Ray, Neutron-Density, Resistivity, Sonic, from surface casing shoe to TD.

7. **Abnormal Conditions:**

   Maximum anticipated bottomhole pressure calculated at 11,600' TVD equals approximately 7,238 psi. This is calculated based on a 0.624 psi/ft gradient (12.0 ppg mud density at TD).

   Maximum anticipated surface pressure equals approximately 4,686 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/ft).

   Maximum anticipated surface pressure based on frac gradient at 7" casing shoe is 0.8 psi/ft at 8,450' TVD = 6,760 psi

   BOPE and casing design will be based on the lesser of the two MASPs which is 4,686 psi.

8. **OPERATOR REQUESTS THAT THE PROPOSED WELL BE PLACED ON CONFIDENTIAL STATUS.**



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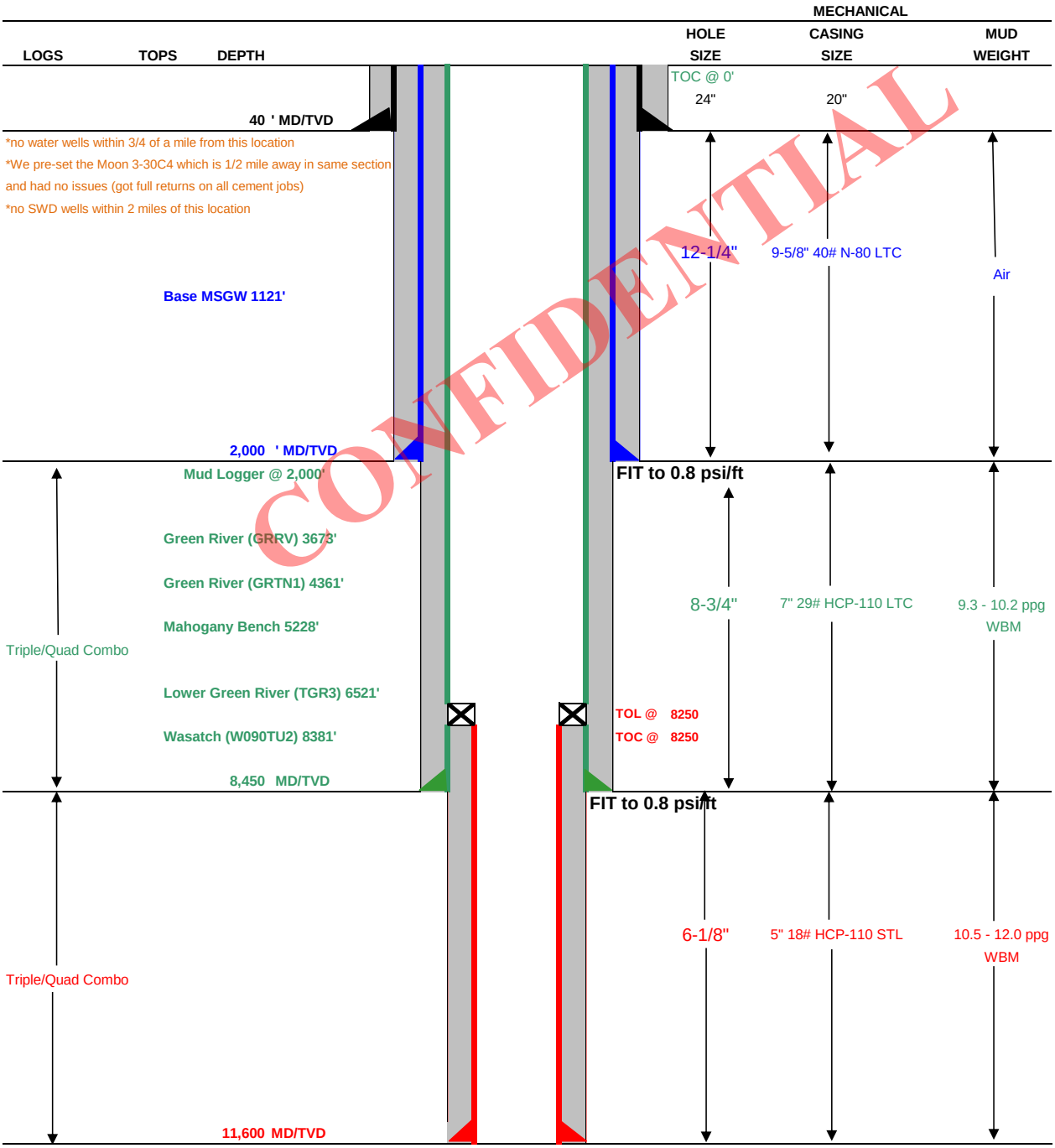
# Drilling Schematic

| | | | |
|---|---|---|---|
| **Company Name:** | EP ENERGY | **Date:** | February 11, 2015 |
| **Well Name:** | Karren Trust 4-30C4 | **TD:** | 11,600 |
| **Field, County, State:** | Altamont, Duchesne, Utah | **AFE #:** | TBD |
| **Surface Location:** | Sec 30 T3S R4W 763' FNL 1733' FEL | **BHL:** | Straight Hole |
| **Objective Zone(s):** | Green River, Wasatch | **Elevation:** | 5803.8 |
| **Rig:** | Precision 406 | **Spud (est.):** | TBD |
| **BOPE Info:** | Diverter System from 40' to 2,000' . 11 10M BOPE w/ rotating head & 5M annular from 2,000' to 8,450' . 11 10M BOPE w/ rotating head, spacer spool, 5M annular, flex rams, blind rams, single w/ flex rams from 8,450' to TD | | |



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**DRILLING PROGRAM**

| CASING PROGRAM | SIZE | INTERVAL | | WT. | GR. | CPLG. | BURST | COLLAPSE | TENSION |
|---|---|---|---|---|---|---|---|---|---|
| SURFACE | 9-5/8" | 0 | 2000 | 40.00 | N-80 | LTC | 5,750 | 3,090 | 737 |
| INTERMEDIATE | 7" | 0 | 8450 | 29.00 | HCP-110 | LTC | 11,220 | 9,750 | 797 |
| PRODUCTION LINER | 5" | 8250 | 11600 | 18.00 | HCP-110 | STL | 13,940 | 15,450 | 341 |

| CEMENT PROGRAM | | FT. OF FILL | DESCRIPTION | SACKS | EXCESS | WEIGHT | YIELD |
|---|---|---|---|---|---|---|---|
| SURFACE | Lead | 1,500 | EXTENDACEM SYSTEM: Type V Cement + 2% Cal-Seal + 0.35% Versaset + 0.3% D-Air 5000 + 6% Salt + 2% Econolite + 0.125 Poly-E-Flake | 412 | 100% | 12.0 ppg | 2.36 |
| | Tail | 500 | HALCEM SYSTEM: Class G Cement + 3 lbm/sk Silicalite Compacted + 1% Salt + 0.3% Econolite + 0.25 lbm/sk Poly-E-Flake + 0.25 lbm/sk Kwik Seal + 0.3% D-AIR 5000 | 195 | 50% | 14.3 ppg | 1.30 |
| INTERMEDIATE | Lead | 6,000 | EXTENDACEM SYSTEM: Class G Cement + 6% Bentonite + 0.2% Econolite + 0.3% Versaset + 0.75% HR-5 + 0.3% Super CBL + 0.2% Halad-322 + 0.125 lb/sk Poly-E-Flake | 590 | 35% | 12.5 ppg | 1.91 |
| | Tail | 2,450 | EXPANDACEM SYSTEM: Class G Cement + 4% Bentonite + 0.25 Poly-E-Flake + 0.1% Halad-413 + 5 lb/sk Silicalite Compacted + 0.15% SA-1015 + 0.3% HR-5 | 298 | 30% | 13.0 ppg | 1.64 |
| PRODUCTION LINER | | 3,350 | EXTENDACEM SYSTEM: Class G Cement + 0.2% Super CBL +0.3% Halad 344 + 0.3% Halad 413 + 5 lb/sk Silicalite + 20% SSA-1 + 2% Bentonite + 0.7% HR-5 | 199 | 30% | 14.2 ppg | 1.52 |



| FLOAT EQUIPMENT & CENTRALIZERS | |
|---|---|
| SURFACE | PDC drillable guide shoe, 1 joint casing, PDC drillable float collar. Thread lock all float equipment. Install bow spring centralizers on the bottom 3 joints of casing & every 3rd joint thereafter. |
| INTERMEDIATE | Halliburton's PDC drillable 10M,P-110 float shoe, 1 joint, PDC drillable 10M, P-110 float collar. Thread lock all float equipment. Maker joint at +/- 6,500'. |
| LINER | Float shoe, 1 joint, float collar,1 joint, landing collar. Thread lock all FE. Maker joints every 1000'. |

**PROJECT ENGINEER(S):** Brad MacAfee 713-997-6383

**MANAGER:** Bob Dodd

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# KARREN TRUST 4-30C4
## WELL LOCATION: NW/NE SECTION 30, T.3S, R.4W. U.S.B.&M.
## DUCHESNE COUNTY, UTAH

PROCEED IN A NORTHERLY DIRECTION FROM DUCHESNE, UTAH ALONG STATE HIGHWAY 87 APPROXIMATELY 3.2 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ACCESS ROAD TO THE EAST; TURN RIGHT AND PROCEED IN A SOUTHEASTERLY DIRECTION APPROXIMATELY 0.4 MILES TO THE JUNCTION OF THIS ROAD AND THE PROPOSED ACCESS ROAD TO THE SOUTH; TURN RIGHT AND FOLLOW ROAD FLAGS IN A SOUTHERLY THEN SOUTHEASTERLY DIRECTION APPROXIMATELY 3,651 FEET TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM DUCHESNE, UTAH TO THE PROPOSED LOCATION IS APPROXIMATELY 3.6 MILES.



OUTLAW ENGINEERING INC.
P.O. BOX 1800
ROOSEVELT, UTAH 84066
(435) 232-4321

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EP ENERGY

# KARREN TRUST 4-30C4

WELL LOCATION: NW/NE SECTION 30, T.3S, R.4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH


**Photo: View of location stake** **Camera Angle: Southwesterly**




**Photo: View from beginning of proposed access** **Camera Angle: Southerly**

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P.O. BOX 1800
ROOSEVELT, UTAH 84066
(435) 232-4321

PARCEL INFORMATION SHOWN HAS NOT BEEN SURVEYED BY OUTLAW ENGINEERING, INC. AND MAY NOT REFLECT ACTUAL LOCATION OF PROPERTY LINES.

Location Photos

| | |
|---|---|
| VERSION: | V2 |
| SURVEYED: | 12-17-14 |

EP ENERGY

DEC 27, 2014
AUTHOR: BWH
PHOTO

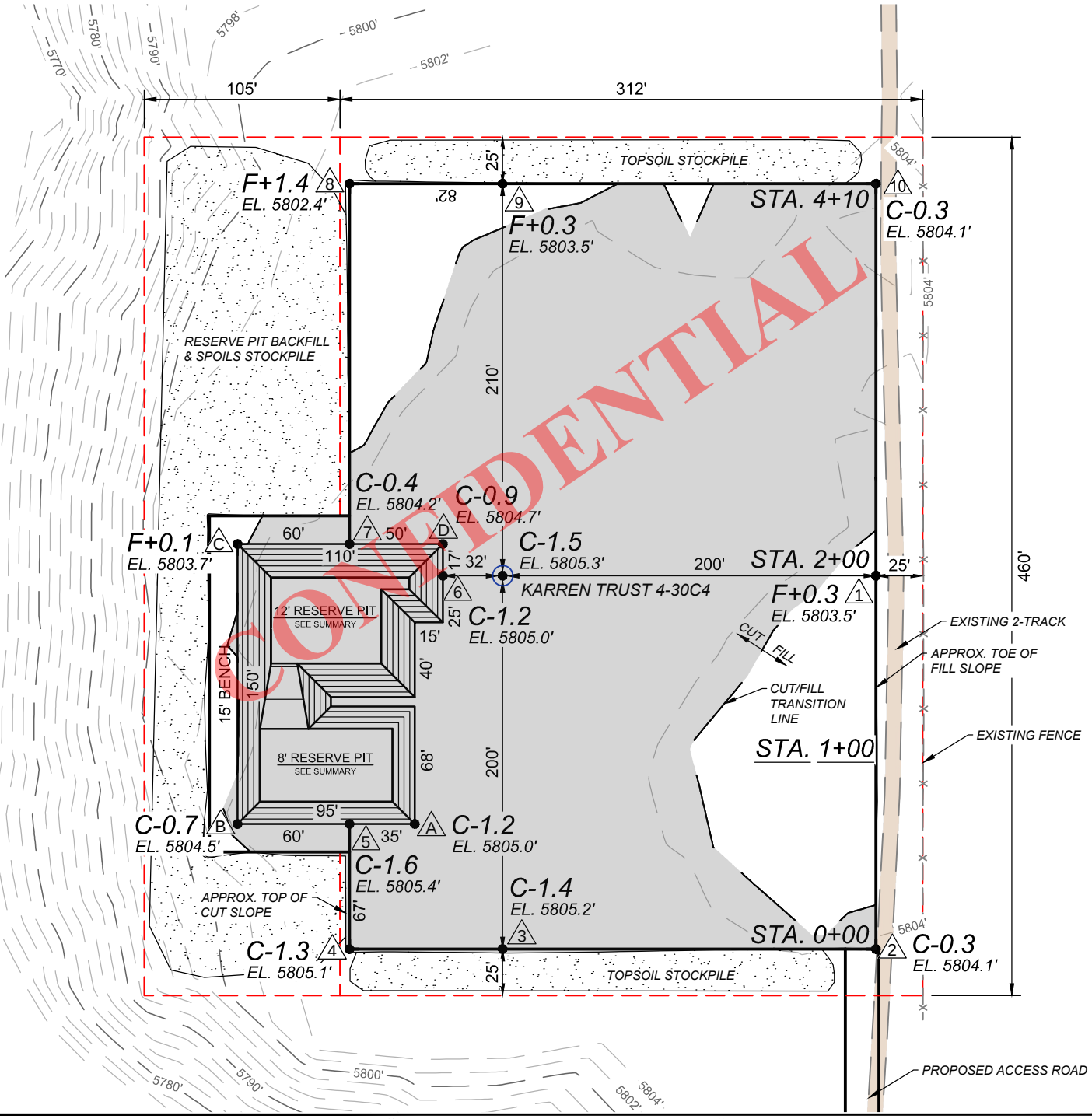
RECEIVED: February 12, 2015

EP ENERGY

# PROPOSED LOCATION LAYOUT

## KARREN TRUST 4-30C4

WELL LOCATION: NW/NE SECTION 30, T3S, R4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH




LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMITS OF DISTURBANCE
- EXISTING FENCE
- DIVERSION DITCH
- 2 — CORNER NUMBER
- F+5.7 — CUT/FILL NUMBER
- EL. 5860.8' — EXISTING GRADE
- PROPOSED WELL LOCATION

SUMMARY

EXISTING GRADE @ CENTER OF WELL= 5805.3'
FINISH GRADE ELEVATION = 5803.8'
CUT SLOPES = 1.5 : 1
FILL SLOPES = 1.5 : 1
TOTAL WELL PAD AREA = 2.96 ACRES
TOTAL WELL PAD DISTURBANCE AREA = 4.40 ACRES

*RESERVE PIT*
8' & 12' DEEP, SEE ABOVE
SLOPE 1.5:1
PIT VOL. = 3,890 CY

OUTLAW ENGINEERING INC.
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ROOSEVELT, UTAH 84066
(435) 232-4321

0 40 80
HORIZONTAL

PROPOSED LOCATION LAYOUT
KARREN TRUST 4-30C4
WELL LOCATION: NW/NE SECTION 30, T3S, R4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH

EP ENERGY

PAD/PIT GRADING

DECEMBER 24, 2014
SCALE: 1" = 80'
DESIGN: MA,RFII DRAWN: JMH

SHEET NO. 2

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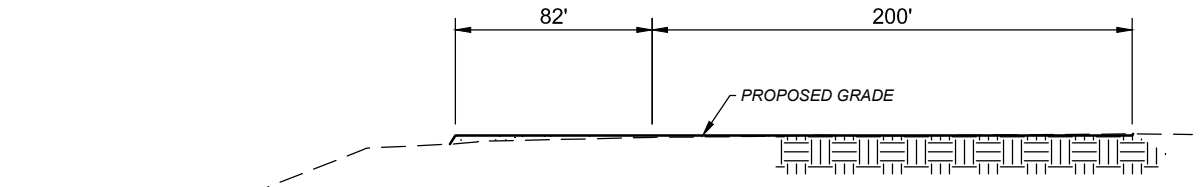
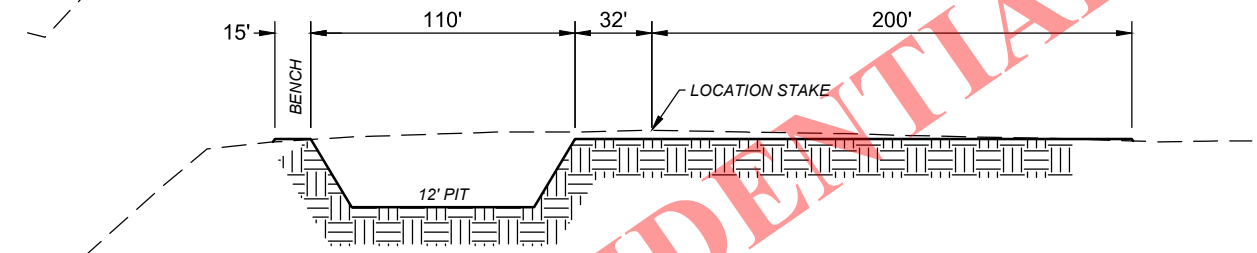
# CROSS SECTIONS

## KARREN TRUST 4-30C4

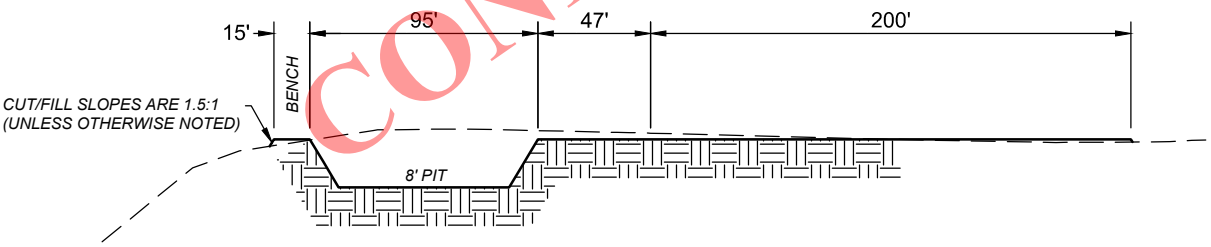
WELL LOCATION: NW/NE SECTION 30, T3S, R4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH



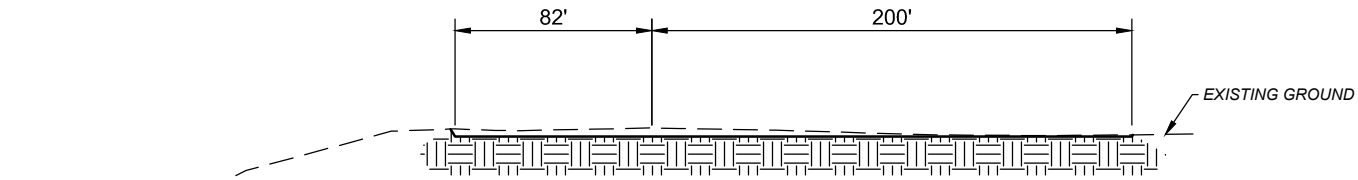

Sta. 4+10




Sta. 2+00




Sta. 1+00




Sta. 0+00



LEGEND

EXISTING CONTOURS
PROPOSED CONTOURS
CUT
FILL

**ESTIMATED EARTHWORK QUANTITIES**
* NO SHRINK OR SWELL FACTORS HAVE BEEN USED
(QUANTITIES EXPRESSED IN CUBIC YARDS)

| ITEM | CUT | FILL | EXCESS/ IMPORT | 6" T.S.* |
|---|---|---|---|---|
| PAD | 1,170 | 1,170 | 0 | 2,420 |
| PIT | 3,890 | - | 0 | - |

*(T.S.) = TOPSOIL STRIPPING

OUTLAW ENGINEERING INC.
P.O. BOX 1800
ROOSEVELT, UTAH 84066
(435) 232-4321

0 40 80
HORIZONTAL

CROSS SECTIONS
KARREN TRUST 4-30C4
WELL LOCATION: NW/NE SECTION 30, T3S, R4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH

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CROSS SECTIONS

DECEMBER 24, 2014
SCALE: 1" = 80'
DESIGN: MA,RFII DRAWN: JMH

SHEET NO. 3

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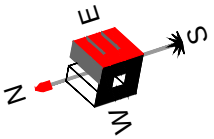
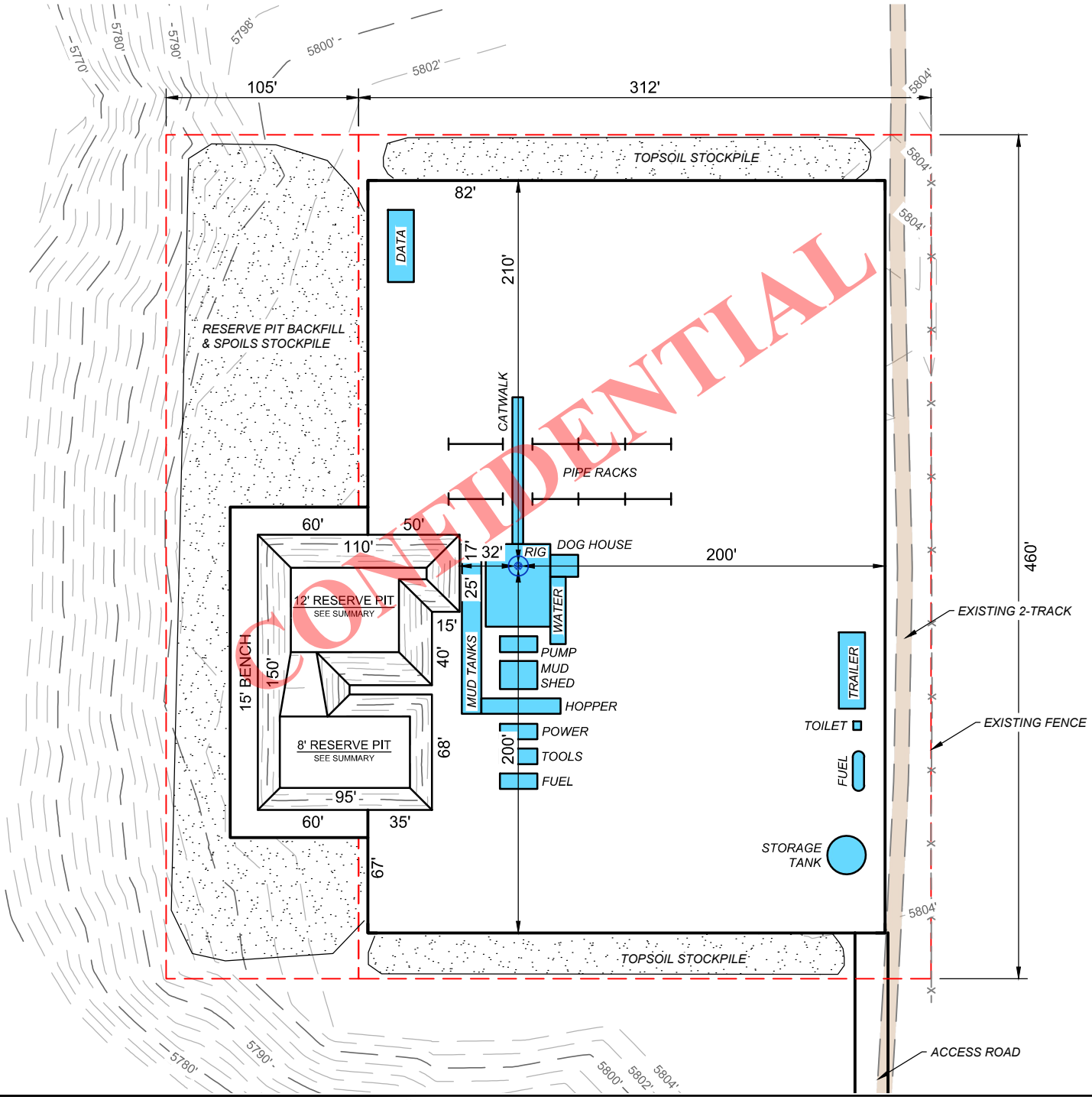
# RIG LAYOUT

## KARREN TRUST 4-30C4

WELL LOCATION: NW/NE SECTION 30, T3S, R4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH






LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMITS OF DISTURBANCE
- EXISTING FENCE
- DIVERSION DITCH
- WELL LOCATION

SUMMARY

SEE CROSS SECTION SHEET FOR QUANTITIES

OUTLAW ENGINEERING INC.
P.O. BOX 1800
ROOSEVELT, UTAH 84066
(435) 232-4321

0 40 80
HORIZONTAL

RIG LAYOUT
KARREN TRUST 4-30C4
WELL LOCATION: NW/NE SECTION 30, T3S, R4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH

EP ENERGY

| RIG LAYOUT | DECEMBER 24, 2014 | SHEET NO. |
|---|---|---|
| | SCALE: 1" = 80' | 4 |
| | DESIGN: MA,RFII DRAWN: JMH | |

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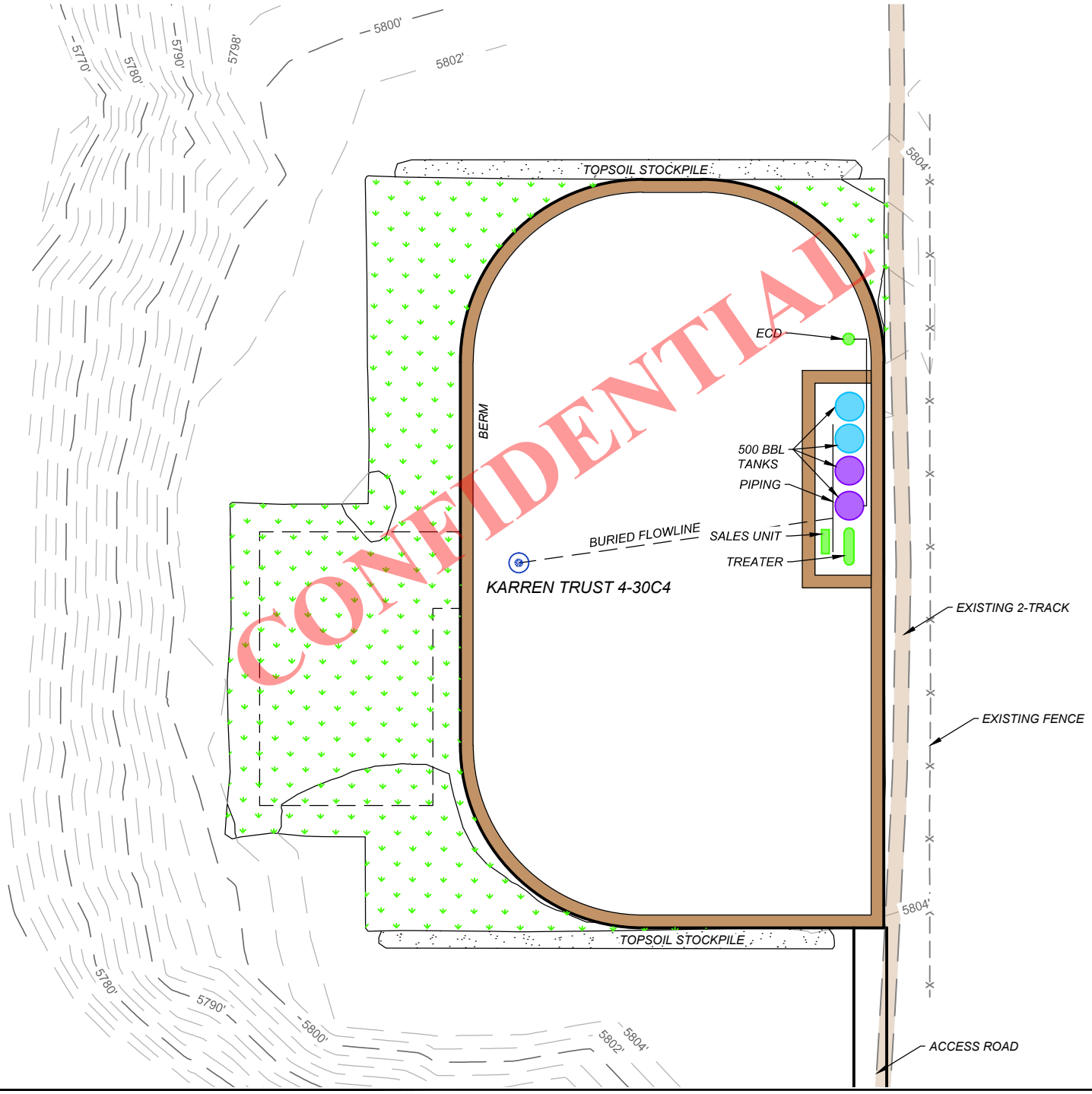
# PRODUCTION FACILITY LAYOUT

## KARREN TRUST 4-30C4

WELL LOCATION: NW/NE SECTION 30, T3S, R4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH




LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMITS OF DISTURBANCE
- EXISTING FENCE
- DIVERSION DITCH
- BERM
- WELL LOCATION
- RECLAIMED AREA

SUMMARY

APPROX UN-RECLAIMED AREA = 2.04 ACRES
APPROX RECLAIMED AREA = 0.92 ACRES

OUTLAW ENGINEERING INC.
P.O. BOX 1800
ROOSEVELT, UTAH 84066
(435) 232-4321

0 40 80
HORIZONTAL

PRODUCTION FACILITY LAYOUT
KARREN TRUST 4-30C4
WELL LOCATION: NW/NE SECTION 30, T3S, R4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH

EP ENERGY

| PRODUCTION LAYOUT | DECEMBER 24, 2014<br>SCALE: 1" = 80'<br>DESIGN: MA,RFII DRAWN: JMH | SHEET NO.<br>5 |
|---|---|---|

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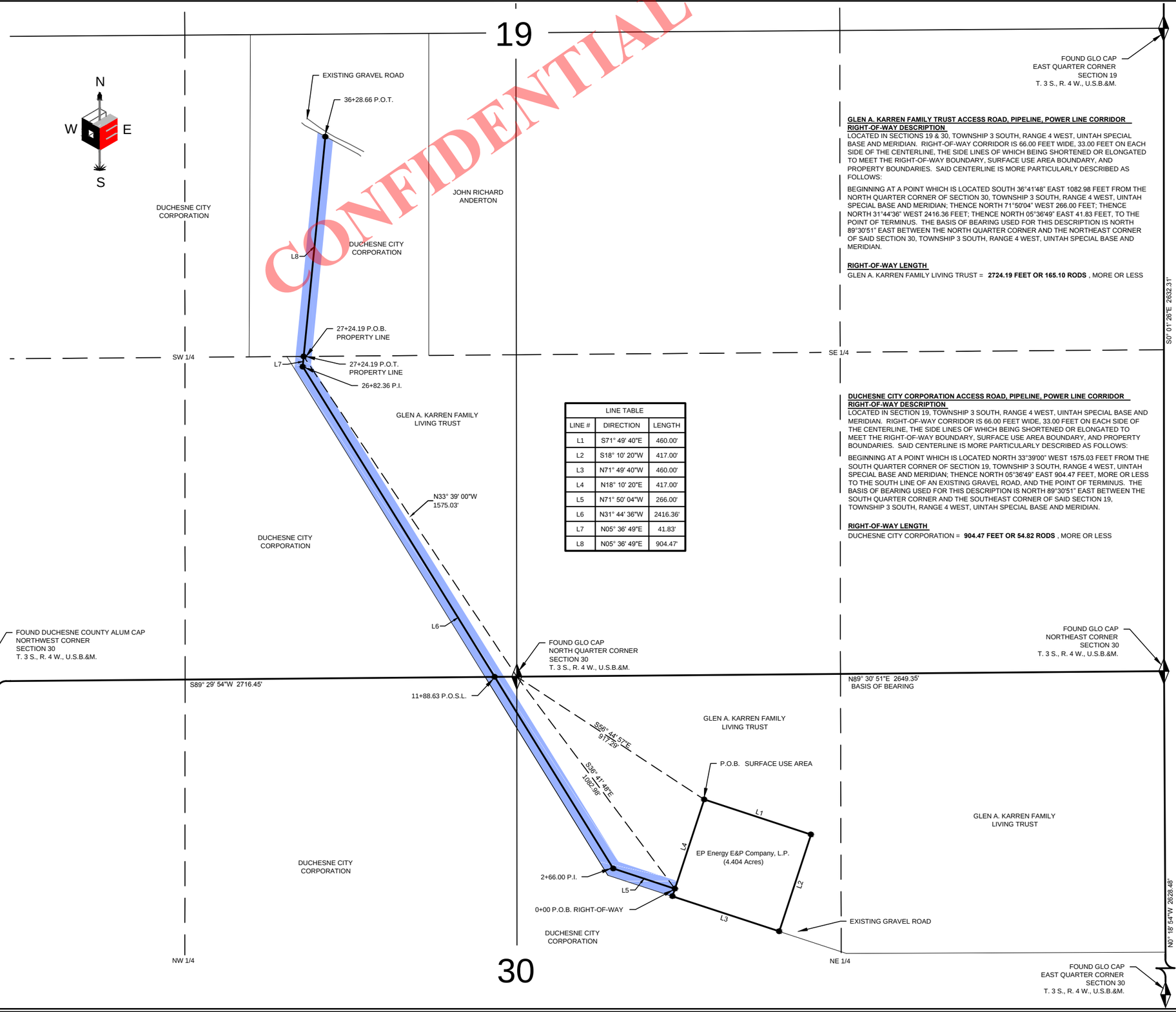



| LINE TABLE | | |
|---|---|---|
| LINE # | DIRECTION | LENGTH |
| L1 | S71° 49' 40"E | 460.00' |
| L2 | S18° 10' 20"W | 417.00' |
| L3 | N71° 49' 40"W | 460.00' |
| L4 | N18° 10' 20"E | 417.00' |
| L5 | N71° 50' 04"W | 266.00' |
| L6 | N31° 44' 36"W | 2416.36' |
| L7 | N05° 36' 49"E | 41.83' |
| L8 | N05° 36' 49"E | 904.47' |

**GLEN A. KARREN FAMILY TRUST ACCESS ROAD, PIPELINE, POWER LINE CORRIDOR RIGHT-OF-WAY DESCRIPTION**

LOCATED IN SECTIONS 19 & 30, TOWNSHIP 3 SOUTH, RANGE 4 WEST, UINTAH SPECIAL BASE AND MERIDIAN. RIGHT-OF-WAY CORRIDOR IS 66.00 FEET WIDE, 33.00 FEET ON EACH SIDE OF THE CENTERLINE, THE SIDE LINES OF WHICH BEING SHORTENED OR ELONGATED TO MEET THE RIGHT-OF-WAY BOUNDARY, SURFACE USE AREA BOUNDARY, AND PROPERTY BOUNDARIES. SAID CENTERLINE IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHICH IS LOCATED SOUTH 36°41'48" EAST 1082.98 FEET FROM THE NORTH QUARTER CORNER OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 4 WEST, UINTAH SPECIAL BASE AND MERIDIAN; THENCE NORTH 71°50'04" WEST 266.00 FEET; THENCE NORTH 31°44'36" WEST 2416.36 FEET; THENCE NORTH 05°36'49" EAST 41.83 FEET, TO THE POINT OF TERMINUS. THE BASIS OF BEARING USED FOR THIS DESCRIPTION IS NORTH 89°30'51" EAST BETWEEN THE NORTH QUARTER CORNER AND THE NORTHEAST CORNER OF SAID SECTION 30, TOWNSHIP 3 SOUTH, RANGE 4 WEST, UINTAH SPECIAL BASE AND MERIDIAN.

**RIGHT-OF-WAY LENGTH**

GLEN A. KARREN FAMILY LIVING TRUST = **2724.19 FEET OR 165.10 RODS** , MORE OR LESS

**DUCHESNE CITY CORPORATION ACCESS ROAD, PIPELINE, POWER LINE CORRIDOR RIGHT-OF-WAY DESCRIPTION**

LOCATED IN SECTION 19, TOWNSHIP 3 SOUTH, RANGE 4 WEST, UINTAH SPECIAL BASE AND MERIDIAN. RIGHT-OF-WAY CORRIDOR IS 66.00 FEET WIDE, 33.00 FEET ON EACH SIDE OF THE CENTERLINE, THE SIDE LINES OF WHICH BEING SHORTENED OR ELONGATED TO MEET THE RIGHT-OF-WAY BOUNDARY, SURFACE USE AREA BOUNDARY, AND PROPERTY BOUNDARIES. SAID CENTERLINE IS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT WHICH IS LOCATED NORTH 33°39'00" WEST 1575.03 FEET FROM THE SOUTH QUARTER CORNER OF SECTION 19, TOWNSHIP 3 SOUTH, RANGE 4 WEST, UINTAH SPECIAL BASE AND MERIDIAN; THENCE NORTH 05°36'49" EAST 904.47 FEET, MORE OR LESS TO THE SOUTH LINE OF AN EXISTING GRAVEL ROAD, AND THE POINT OF TERMINUS. THE BASIS OF BEARING USED FOR THIS DESCRIPTION IS NORTH 89°30'51" EAST BETWEEN THE SOUTH QUARTER CORNER AND THE SOUTHEAST CORNER OF SAID SECTION 19, TOWNSHIP 3 SOUTH, RANGE 4 WEST, UINTAH SPECIAL BASE AND MERIDIAN.

**RIGHT-OF-WAY LENGTH**

DUCHESNE CITY CORPORATION = **904.47 FEET OR 54.82 RODS** , MORE OR LESS

# EP ENERGY E&P COMPANY, L.P.

LOCATION SURFACE USE AREA AND RIGHT-OF-WAY SURVEY ON FEE LANDS FOR

**GLEN A. KARREN FAMILY TRUST & DUCHESNE CITY CORPORATION**

LOCATED IN SECTIONS 19 & 30 TOWNSHIP 3 S., RANGE 4 W., U.S.B.&M., DUCHESNE COUNTY, UTAH

**SURVEYOR'S CERTIFICATE**

I, JARED L. WATSON, DO HEREBY CERTIFY THAT I AM A REGISTERED LAND SURVEYOR AND THAT I HOLD CERTIFICATE NO. 5047065 AS PRESCRIBED UNDER THE LAWS OF THE STATE OF UTAH AND THAT A SURVEY OF THE DESCRIBED PROPERTY HEREIN WAS PERFORMED UNDER MY DIRECTION.


**SURFACE USE AREA DESCRIPTION**

BEGINNING AT A POINT WHICH IS LOCATED SOUTH 56°44'57" EAST 917.29 FEET FROM THE NORTH QUARTER CORNER OF SECTION 30, TOWNSHIP 3 SOUTH, RANGE 4 WEST, UINTAH SPECIAL BASE AND MERIDIAN; THENCE SOUTH 71°49'40" EAST 460.00 FEET; THENCE SOUTH 18°10'20" WEST 417.00 FEET; THENCE NORTH 71°49'40" WEST 460.00 FEET; THENCE NORTH 18°10'20" EAST 417.00 FEET TO THE POINT OF BEGINNING. THE BASIS OF BEARING USED FOR THIS DESCRIPTION IS NORTH 89°30'51" EAST BETWEEN THE NORTH QUARTER CORNER AND THE NORTHEAST CORNER OF SAID SECTION 30, TOWNSHIP 3 SOUTH, RANGE 4 WEST, UINTAH SPECIAL BASE AND MERIDIAN.

**SURFACE USE AREA**

GLEN A. KARREN FAMILY LIVING TRUST = **4.404 ACRES** , MORE OR LESS

LEGEND

= FOUND SECTION CORNER
= SECTION LINE
= QUARTER SECTION LINE
= SIXTEENTH SECTION LINE
= PROPOSED RIGHT-OF-WAY

SCALE: 1" = 400'
11X17 SHEET

REVIEWED: JLW | DRAWN: RLH

SHEET
SURFACE USE AREA & RIGHT-OF-WAY PLAT

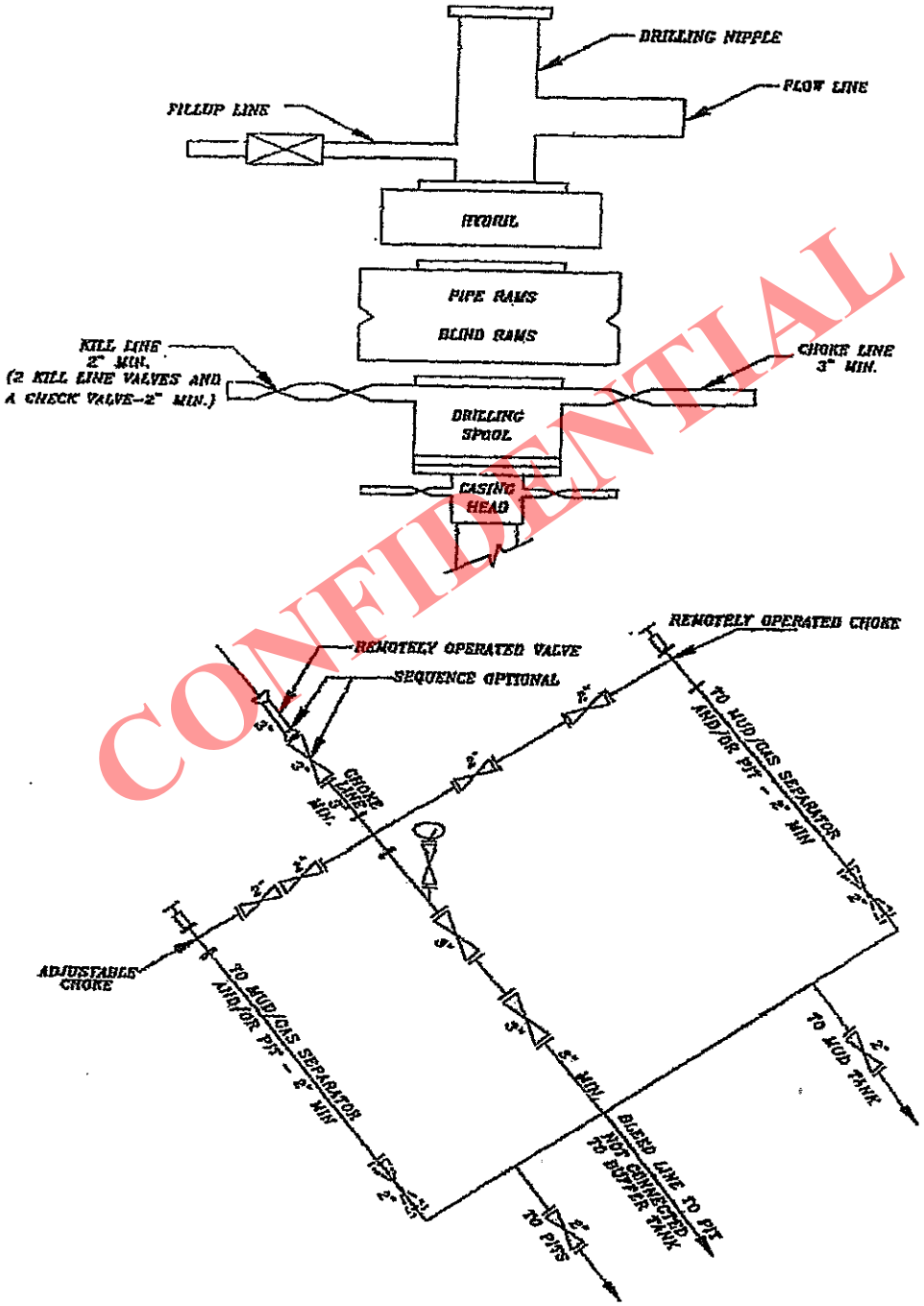
EP ENERGY

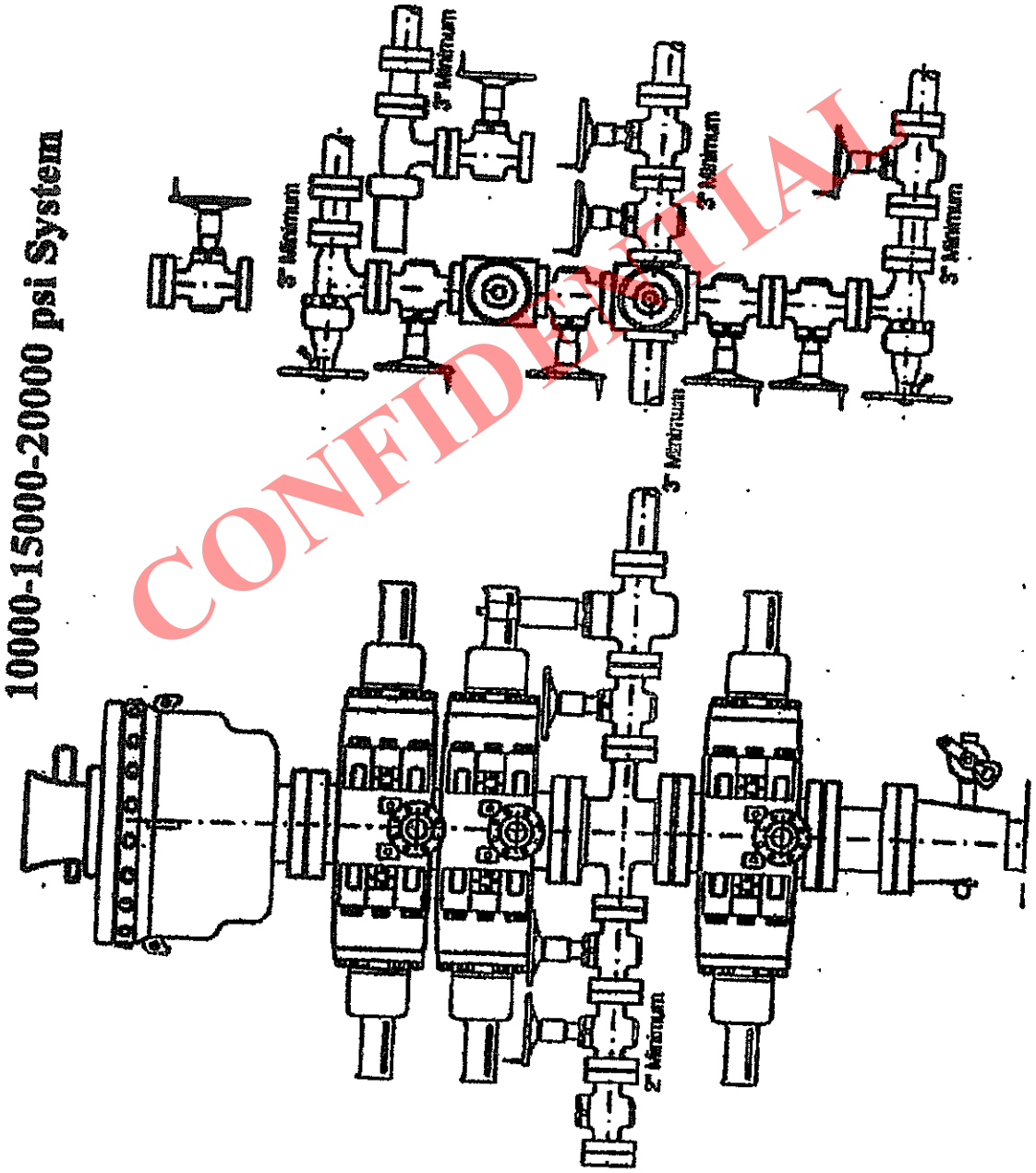
OUTLAW ENGINEERING INC.
P.O. BOX 1800
ROOSEVELT, UTAH 84066
(435) 232-4321

| PLAT NO. | DATE | SHEET NO. |
|---|---|---|
| 300A | JANUARY 26, 2014 | 1 OF 1 |

RECEIVED: February 12, 2015

# 5M BOP STACK and CHOKE MANIFOLD SYSTEM



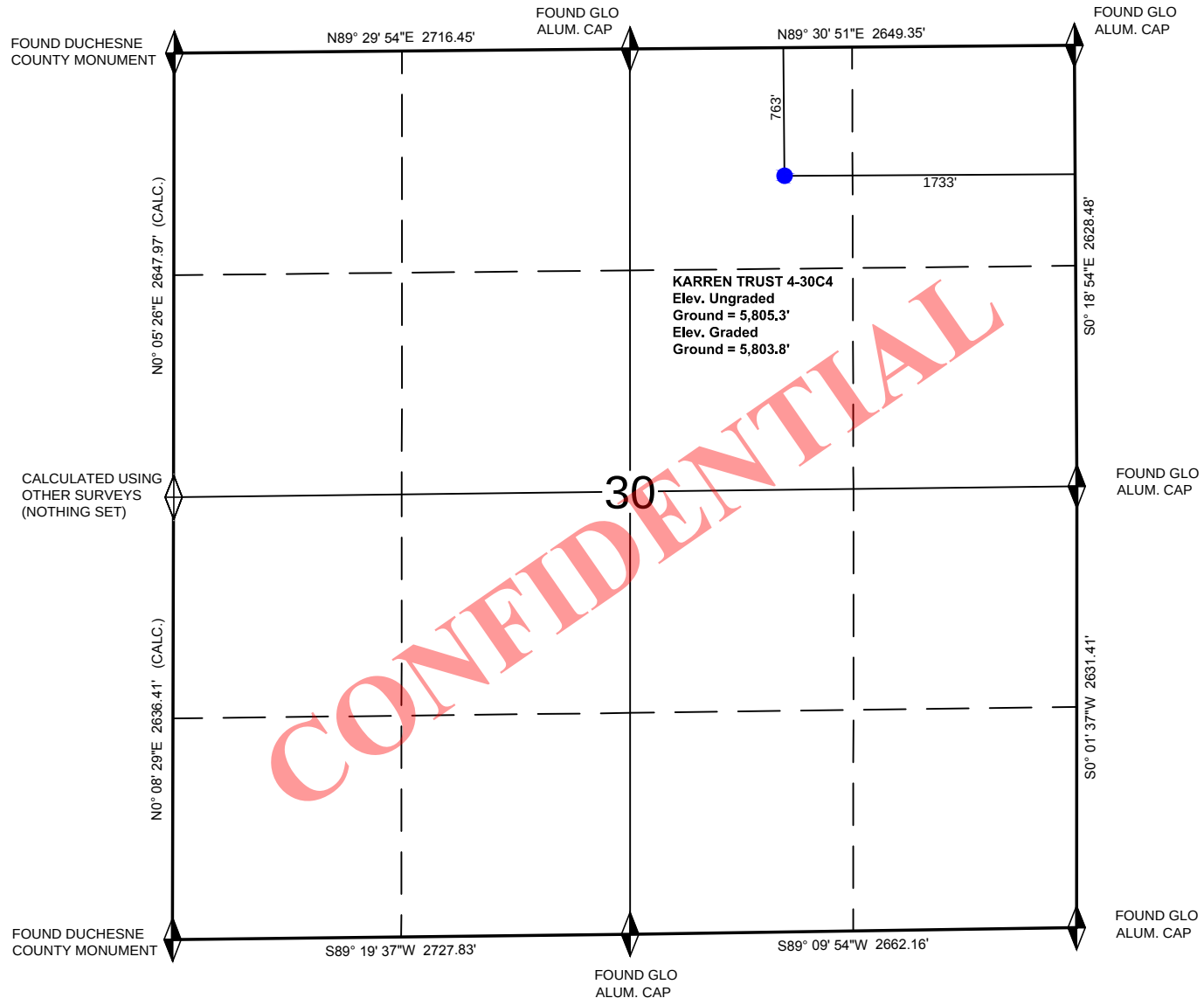


# EP ENERGY

## WELL LOCATION PLAT

**WELL: KARREN TRUST 4-30C4**

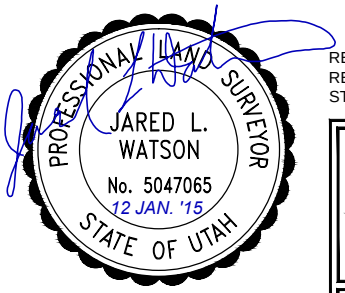
**PAD LOCATION: NW/NE, SECTION 30, T.3S, R.4W, U.S.B.&M.**
**DUCHESNE COUNTY, UTAH**






**CERTIFICATE**

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM THE FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION, AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.




REGISTERED LAND SURVEYOR
REGISTRATION NO. 5047065
STATE OF UTAH

**LEGEND**

= FOUND SECTION CORNER

= CALC. SECTION CORNER

= PROPOSED WELL HEAD

**NOTES:**

1. WELL FOOTAGES ARE MEASURED AT RIGHT ANGLES TO THE SECTION LINE.
2. ALL BEARINGS AND DISTANCES ARE MEASURED UNLESS OTHERWISE NOTED.
3. BEARINGS ARE DERIVED FROM G.P.S. OBSERVATIONS AND EQUIPMENT.
4. THE GENERAL LAND OFFICE G.L.O. PLAT WAS USED FOR REFERENCE

**BASIS OF ELEVATION**

SPOT ELEVATION AT THE NORTHEAST CORNER OF SECTION 30, T3S, R4W, U.S.B.&M. NAVD 88 DATUM USING THE UTAH REFERENCE NETWORK SYSTEM. SAID ELEVATION IS 5685.41 FEET.

OUTLAW ENGINEERING INC.
P.O. BOX 1800
ROOSEVELT, UTAH 84066
(435) 232-4321

EP ENERGY

WELL LOCATION PLAT
**WELL: KARREN TRUST 4-30C4**
**PAD LOCATION: NW/NE, SECTION 30, T. 3 S., R. 4 W., U.S.B.&M.**
**DUCHESNE COUNTY, UTAH**

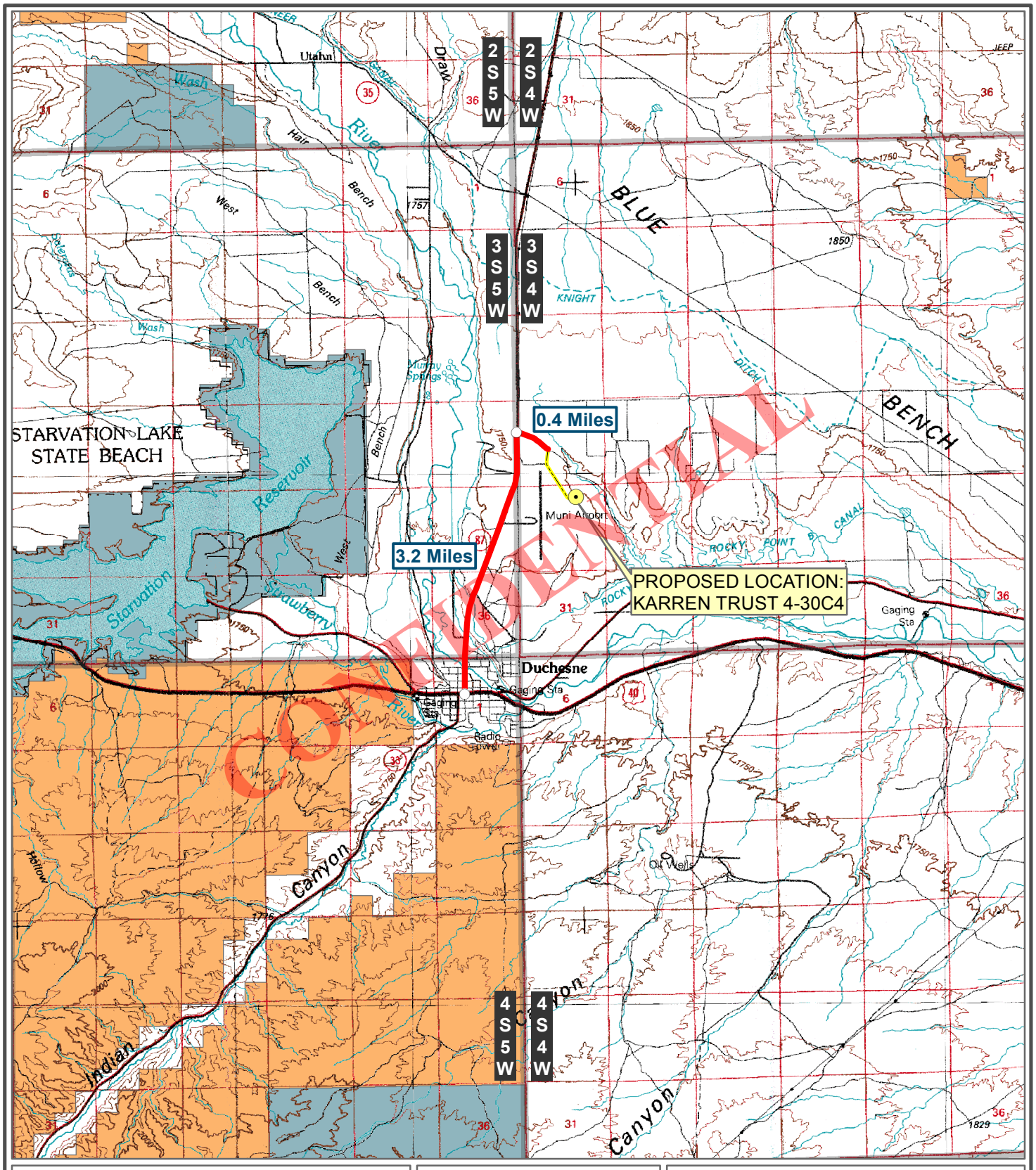
| NAD 83 (SURFACE LOCATION) |
|---|
| LATITUDE = 40°11'47.33919"N (40.196483) |
| LONGITUDE = 110°22'34.49886"W (110.376250) |
| **NAD 27 (SURFACE LOCATION)** |
| LATITUDE = 40°11'47.49247"N (40.196526) |
| LONGITUDE = 110°22'31.93997"W (110.375539) |

0 500 1000
HORIZONTAL

| |
|---|
| DATE SURVEYED: JANUARY 5, 2015 |
| SURVEYED BY: CW/SY |
| DRAWN: JANUARY 12, 2015 |
| DRAWN: JLW |
| SCALE: 1" = 1000' |

SHEET NO. 1

RECEIVED: February 12, 2015

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(435) 232-4321

PARCEL INFORMATION SHOWN HAS NOT BEEN SURVEYED BY OUTLAW ENGINEERING, INC. AND MAY NOT REFLECT ACTUAL LOCATION OF PROPERTY LINES.

Site Location

0 2,000 4,000 6,000 8,000 Feet

| | |
|---|---|
| VERSION: | V2 |
| SURVEYED: | 12-17-14 |

LEGEND

- Karren Trust 4-30C4 Site Location
- Proposed Access Road
- Existing Access Road

Federal | Private | State | Tribal

# KARREN TRUST 4-30C4

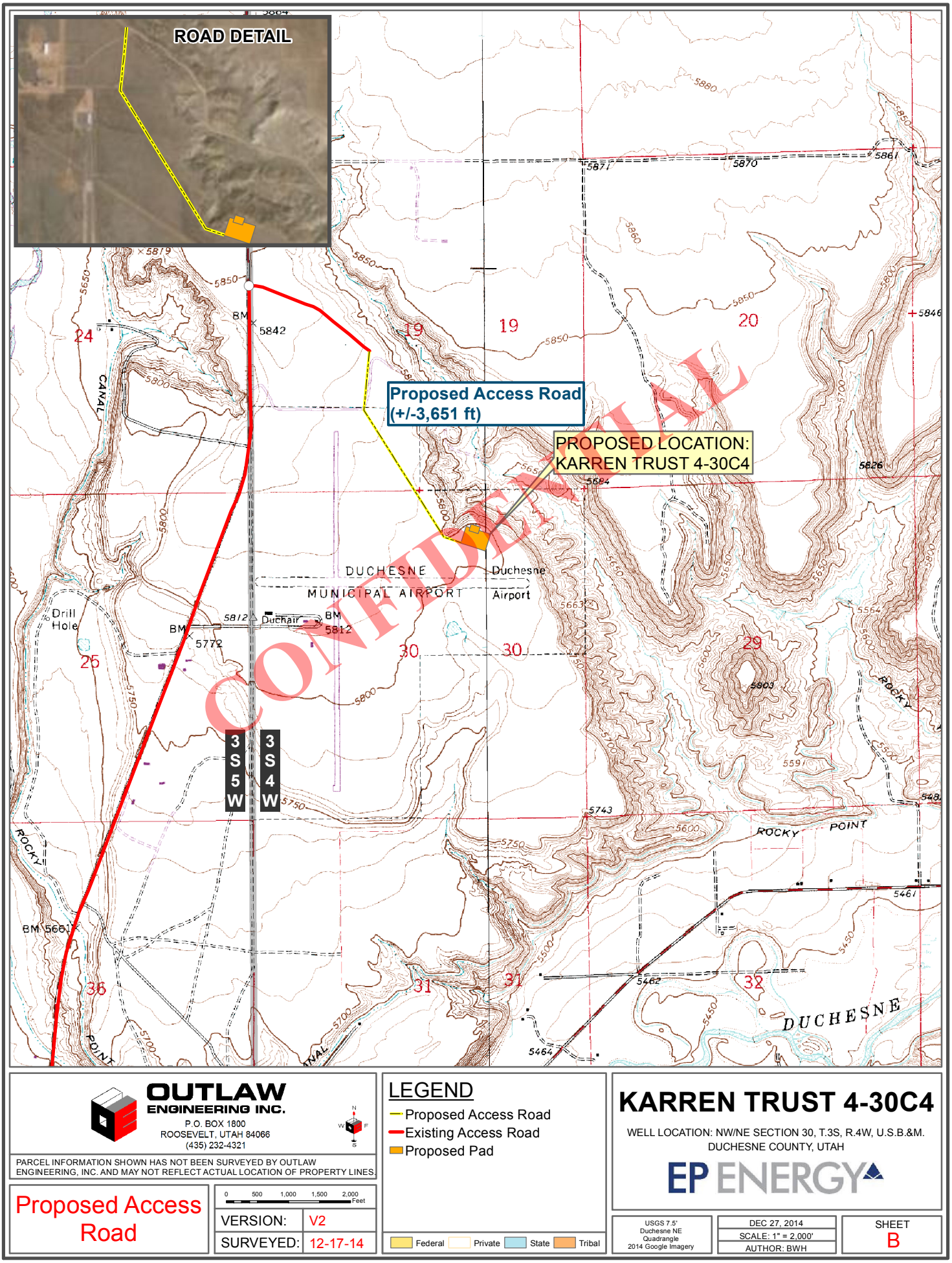
WELL LOCATION: NW/NE SECTION 30, T.3S, R.4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH

EP ENERGY

| | | |
|---|---|---|
| USGS 7.5' Duchesne NE Quadrangle | DEC 27, 2014<br>SCALE: 1" = 8,342'<br>AUTHOR: BWH | SHEET A |

RECEIVED: February 12, 2015

API Well Number: 43013532680000

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(435) 232-4321

PARCEL INFORMATION SHOWN HAS NOT BEEN SURVEYED BY OUTLAW ENGINEERING, INC. AND MAY NOT REFLECT ACTUAL LOCATION OF PROPERTY LINES.

Proposed Access Road

0 500 1,000 1,500 2,000 Feet

| | |
|---|---|
| VERSION: | V2 |
| SURVEYED: | 12-17-14 |

LEGEND
- Proposed Access Road
- Existing Access Road
- Proposed Pad

Federal Private State Tribal

# KARREN TRUST 4-30C4

WELL LOCATION: NW/NE SECTION 30, T.3S, R.4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH

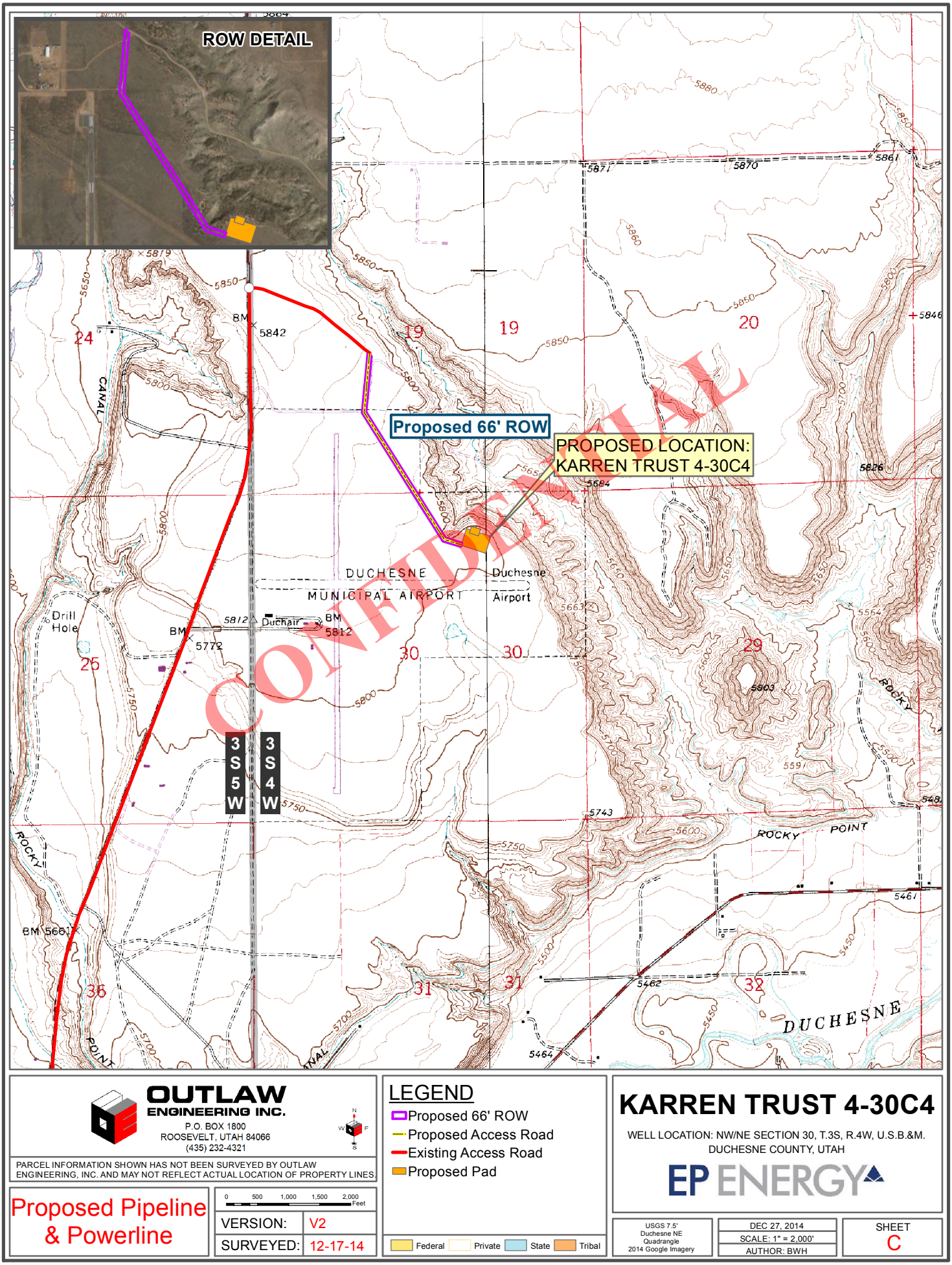
EP ENERGY

USGS 7.5' Duchesne NE Quadrangle 2014 Google Imagery

DEC 27, 2014
SCALE: 1" = 2,000'
AUTHOR: BWH

SHEET B

RECEIVED: February 12, 2015




**OUTLAW ENGINEERING INC.**
P.O. BOX 1800
ROOSEVELT, UTAH 84066
(435) 232-4321

PARCEL INFORMATION SHOWN HAS NOT BEEN SURVEYED BY OUTLAW ENGINEERING, INC. AND MAY NOT REFLECT ACTUAL LOCATION OF PROPERTY LINES.

Proposed Pipeline & Powerline

0 500 1,000 1,500 2,000 Feet

| | |
|---|---|
| VERSION: | V2 |
| SURVEYED: | 12-17-14 |

LEGEND
- Proposed 66' ROW
- Proposed Access Road
- Existing Access Road
- Proposed Pad

Federal Private State Tribal

# KARREN TRUST 4-30C4

WELL LOCATION: NW/NE SECTION 30, T.3S, R.4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH

EP ENERGY

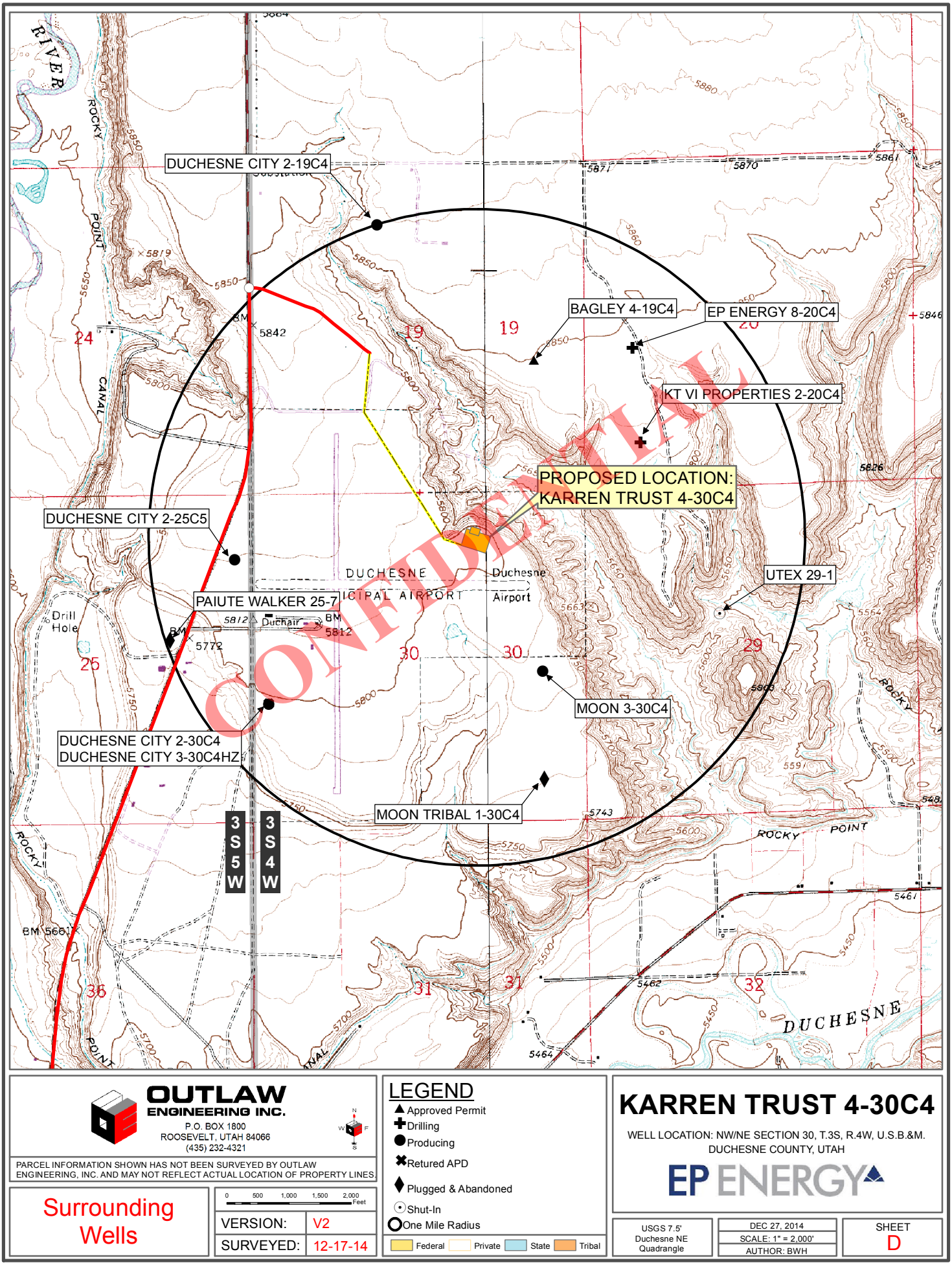
USGS 7.5' Duchesne NE Quadrangle 2014 Google Imagery

DEC 27, 2014
SCALE: 1" = 2,000'
AUTHOR: BWH

SHEET C

RECEIVED: February 12, 2015

API Well Number: 43013532680000




**OUTLAW ENGINEERING INC.**
P.O. BOX 1800
ROOSEVELT, UTAH 84066
(435) 232-4321

PARCEL INFORMATION SHOWN HAS NOT BEEN SURVEYED BY OUTLAW ENGINEERING, INC. AND MAY NOT REFLECT ACTUAL LOCATION OF PROPERTY LINES.

Surrounding Wells

0 500 1,000 1,500 2,000 Feet

| | |
|---|---|
| VERSION: | V2 |
| SURVEYED: | 12-17-14 |

LEGEND

- Approved Permit
- Drilling
- Producing
- Retured APD
- Plugged & Abandoned
- Shut-In
- One Mile Radius

Federal | Private | State | Tribal

# KARREN TRUST 4-30C4

WELL LOCATION: NW/NE SECTION 30, T.3S, R.4W, U.S.B.&M.
DUCHESNE COUNTY, UTAH

EP ENERGY

| | | |
|---|---|---|
| USGS 7.5' Duchesne NE Quadrangle | DEC 27, 2014<br>SCALE: 1" = 2,000'<br>AUTHOR: BWH | SHEET D |

RECEIVED: February 12, 2015

EP ENERGY

February 11, 2015

State of Utah Division of Oil, Gas and Mining
Attn: Mr. Brad Hill
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

RE: Application for Permit to Drill
Karren Trust 4-30C4
SHL: 763' FNL & 1733' FEL
NW/4NE/4 of Section 30, Township 3 South, Range 4 West
Duchesne County, Utah

Dear Mr. Hill:

In accordance with the rules and regulations of the State of Utah, EP Energy E&P Company, L.P. ("EP Energy") is submitting an Application for Permit to Drill ("APD") for the proposed Karren Trust 4-30C4 ("Well") to the Utah Division of Oil, Gas & Mining ("UDOGM"). Concurrently with the filing of the APD for the Well, this *Application for Permit to Drill* letter hereby serves as notice to UDOGM that EP Energy is actively working to finalize the Surface Use and Right-of-Way Agreement ("Surface Agreement") with the surface owner of the Well, whose contact information is as follows ("Surface Owner"):

Glen A. Karren Family Living Trust, under agreement dated March 5, 2008
PO Box 170
Duchesne, UT 84021-0170
Telephone: (435) 823-6355



EP Energy has been diligently negotiating in good-faith with the Surface Owner for several months and is nearing an agreement on the Surface Agreements for the proposed Well. Although EP Energy is confident the Surface Agreements will be executed soon, we are filing the APD without the executed Surface Agreements due to the demands of our drilling schedule. This will allow UDOGM to begin the permitting process as EP Energy finalizes the Surface Agreements. The Affidavit of Surface Agreements ("Affidavit") will be forwarded directly to your office as soon as the Surface Agreements are executed.

UDOGM's effort to begin processing the APD without the executed Surface Agreements is greatly appreciated. EP Energy fully understands the APD will not be approved until we submit the Affidavit or otherwise comply with the Surface Owner Protection Act Provision R649-3-38.

If you have any further questions, please feel free to contact me at your convenience using the phone number and/or email address below.

Very truly yours,

Jacquelyn Lynch

EP Energy E&P Company, L.P.
Landman
1001 Louisiana Street, Suite 2525D
Houston, Texas 77002
Office: (713) 997-5747
Jacquelyn.Lynch@EPEnergy.com

Application for Permit to Drill – State DOGM
Karren Trust 4-30C4
Duchesne County, Utah

**EP Energy E&P Company, L.P.**

**Related Surface Information**

1. **Current Surface Use:**
   - Livestock Grazing and Oil and Gas Production.

2. **Proposed Surface Disturbance:**
   - The road will be crown and ditch. Water wings will be constructed on the access road as needed.
   - The topsoil will be windrowed and re-spread in the borrow area.
   - New road to be constructed will be approximately .69 miles in length and 66 feet wide.
   - All equipment and vehicles will be confined to the access road, pad and area specified in the APD.

3. **Location Of Existing Wells:**
   - Existing oil, gas wells within one (1) mile radius of proposed well are provided in EXHIBIT C.

4. **Location And Type Of Drilling Water Supply:**
   - Drilling water: Duchesne City Water

5. **Existing/Proposed Facilities For Productive Well:**
   - There are no existing facilities that will be utilized for this well.
   - A pipeline corridor .69 miles will parallel the proposed access road. The corridor will contain one 4 inch gas line and one 2 inch gas line and one 2 inch Salt Water disposal line. Rehabilitation of unneeded, previously disturbed areas will consist of backfilling and contouring the reserve pit area; backsloping and contouring all cut and fill slopes. These areas will be reseeded. Refer to plans for reclamation of surface for details.
   - Upgrade and maintain access roads and drainage control structures (e.g., culverts, drainage dips, ditching, etc.) as necessary to prevent soil erosion and accommodate safe, year-round traffic.

6. **Construction Materials:**
   - Native soil from road and location will be used for construction materials along with gravel and/or scoria road base material. In the event that conditions should necessitate graveling of all or part of the access road and location, surfacing materials will be purchased from commercial suppliers in the marketing area.

7. **Methods For Handling Waste Disposal:**
   - The reserve pit will be designed to prevent the collection of surface runoff and will be constructed with a minimum of ½ the total depth below the original ground surface on the lowest point with the pit. The pit will be lined with a 20-mil polyethylene to prevent leakage of fluids. The liner will be rolled into place and secured at the ends, i.e. buried on top of the pit berms. Prior to use, the reserve pit will be fenced on three sides; the fourth side will be fenced at the time the rig is removed. Drilling fluids, cuttings and produced water will be contained in the reserve pit (trash will be place in the trash cage). Fluids in the reserve pit will be allowed to evaporate prior to pit burial.
   - Garbage and other trash will be contained in the portable trash cage and hauled off the location to an authorized disposal site. Any trash on the pad will be cleaned up prior to the rig moving off location and hauled to an authorized disposal site.
   - Sewage will be handled in Portable Toilets.
   - Produced water will be placed in the reserve pit for a period not to exceed ninety days after initial production. Any hydrocarbons produced during completion work will be contained in test tanks and removed from the location at a later date.
   - Water from the reserve pit may be used for drilling of additional wells. The water will be trucked along access roads as approved in pertinent APD's

8. **Ancillary Facilities:**
   - There will be no ancillary facilities associated with this project.



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**9.** **Surface Reclamation Plans:**

Backfilling of the pits will be done when dry. In the event of a dry hole, the location will be re-contoured, the topsoil will be distributed evenly over the entire location, and the seedbed prepared.

- Seed will be planted after September 15th, and prior to ground frost, or seed will be planted after the frost has left and before May 15th. Slopes to steep for machinery will be hand broadcast and raked with twice the specified amount of seed.

    1. The construction program and design are on the attached cut, fill and cross sectional diagrams.
    2. Prior to construction, all topsoil will be removed from the entire site and stockpiled. Topsoil for this site is the first 6 inches of soil materials.
    3. After the location has been reshaped and after redistributing the topsoil, the operator will rip and scarify the drilling platform and access road on the contour, to a depth of at least 12 inches.

- Rehabilitation will begin upon the completion of the drilling. Complete rehabilitation will depend on weather conditions and the amount of time required to dry the reserve pit.

    1. All rehabilitation work including seeding will be completed as soon as weather and the reserve pit conditions are appropriate.
    2. Landowner will be contacted for rehabilitation requirements.

**10.** **Surface Ownership:**

Glen A. Karren Family Living Trust, under agreement dated March 2, 2008
PO Box 170
Duchesne, Utah 84021-0170
435-823-6355

**Other Information:**

- The surface soil consists of clay, and silt.
- Flora – vegetation consists of the following: Sagebrush, Juniper and prairie grasses.
- Fauna – antelope, deer, coyotes, raptors, small mammals, and domestic grazing animals.
- Current surface uses – Livestock grazing and mineral exploration and production.

- **Operator and Contact Persons:**

**Construction and Reclamation:**
**EP Energy E&P Company, L.P.**
**Wayne Garner**
**PO Box 410**
**Altamont, Utah 84001**
**435-454-3394 – Office**
**435-823-1490 – Cell**

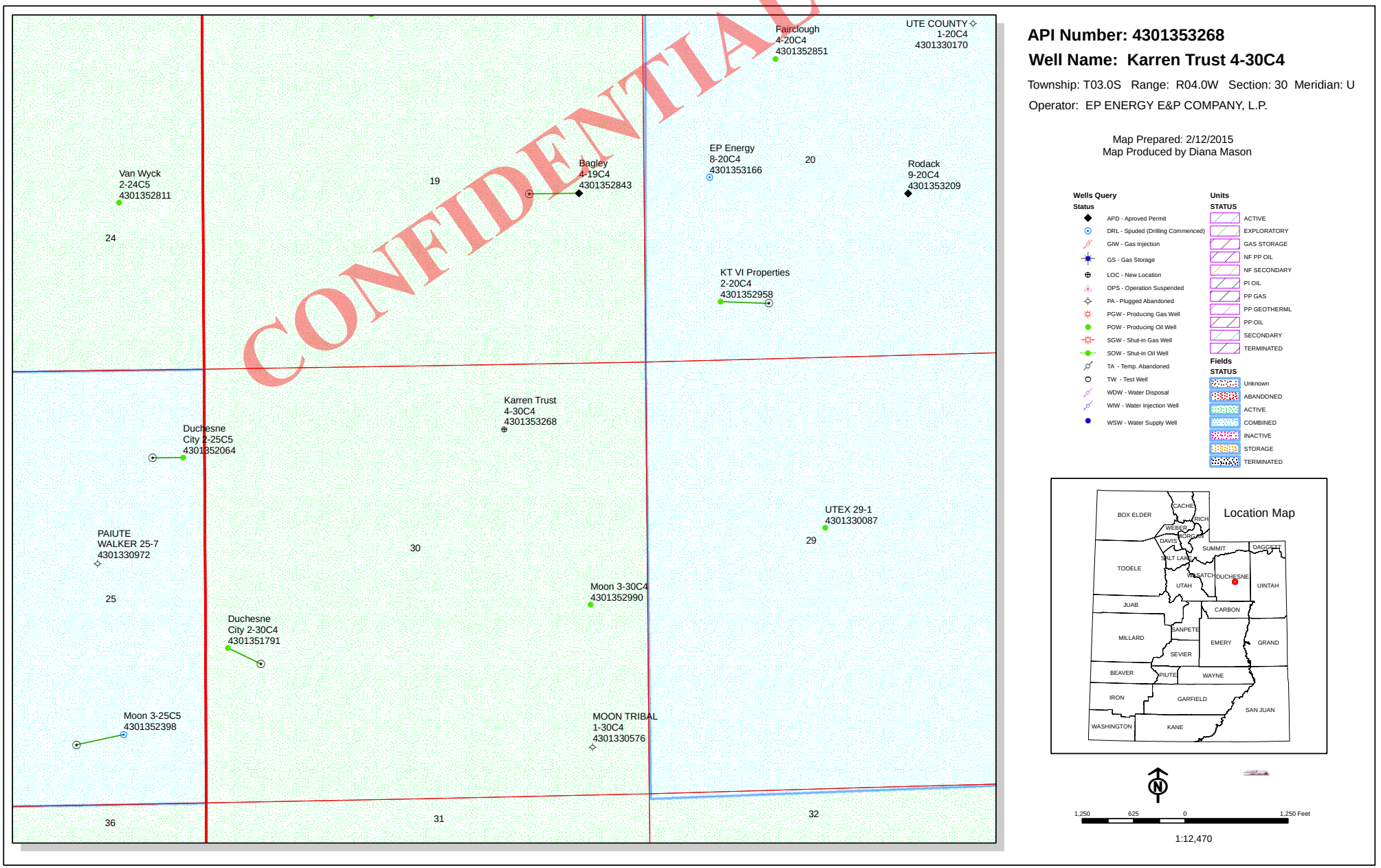
**Regarding This APD**
**EP Energy E&P Company, L.P.**
**Maria S. Gomez**
**1001 Louisiana, Rm 2730D**
**Houston, Texas 77002**
**713-997-5038 – Office**

**Drilling**
**EP Energy E&P Company, L.P.**
**Brad MacAfee – Drilling Engineer**
**1001 Louisiana, Rm 2660D**
**Houston, Texas 77002**
**713-997-6383 – office**
**281-813-0902 – Cell**



RECEIVED: February 12, 2015

API Well Number: 43013532680000




**API Number: 4301353268**

**Well Name: Karren Trust 4-30C4**

Township: T03.0S Range: R04.0W Section: 30 Meridian: U

Operator: EP ENERGY E&P COMPANY, L.P.

Map Prepared: 2/12/2015
Map Produced by Diana Mason

**Wells Query**

**Status**

- APD - Aproved Permit
- DRL - Spuded (Drilling Commenced)
- GIW - Gas Injection
- GS - Gas Storage
- LOC - New Location
- OPS - Operation Suspended
- PA - Plugged Abandoned
- PGW - Producing Gas Well
- POW - Producing Oil Well
- SGW - Shut-in Gas Well
- SOW - Shut-in Oil Well
- TA - Temp. Abandoned
- TW - Test Well
- WDW - Water Disposal
- WIW - Water Injection Well
- WSW - Water Supply Well

**Units**

**STATUS**

- ACTIVE
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

**Fields**

**STATUS**

- Unknown
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- STORAGE
- TERMINATED







1:12,470

RECEIVED: February 12, 2015

API Well Number: 43013532680000

**BOPE REVIEW EP ENERGY E&P COMPANY, L.P. Karren Trust 4-30C4 43013532680000**

| Well Name | EP ENERGY E&P COMPANY, L.P. Karren Trust 4-30C4 430135326800 | | | |
|---|---|---|---|---|
| String | Surf | I1 | L1 | |
| Casing Size(") | 9.625 | 7.000 | 5.000 | |
| Setting Depth (TVD) | 2000 | 8450 | 11600 | |
| Previous Shoe Setting Depth (TVD) | 0 | 2000 | 8450 | |
| Max Mud Weight (ppg) | 8.3 | 10.2 | 12.0 | |
| BOPE Proposed (psi) | 500 | 10000 | 10000 | |
| Casing Internal Yield (psi) | 5750 | 11220 | 13940 | |
| Operators Max Anticipated Pressure (psi) | 7238 | | 12.0 | |

| Calculations | Surf String | 9.625 | " | |
|---|---|---|---|---|
| Max BHP (psi) | .052*Setting Depth*MW= | 863 | | |
| | | | BOPE Adequate For Drilling And Setting Casing at Depth? | |
| MASP (Gas) (psi) | Max BHP-(0.12*Setting Depth)= | 623 | NO | diverter stack |
| MASP (Gas/Mud) (psi) | Max BHP-(0.22*Setting Depth)= | 423 | YES | OK |
| | | | *Can Full Expected Pressure Be Held At Previous Shoe? | |
| Pressure At Previous Shoe | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | 423 | NO | OK |
| Required Casing/BOPE Test Pressure= | | 2000 | psi | |
| *Max Pressure Allowed @ Previous Casing Shoe= | | 0 | psi | *Assumes 1psi/ft frac gradient |

| Calculations | I1 String | 7.000 | " | |
|---|---|---|---|---|
| Max BHP (psi) | .052*Setting Depth*MW= | 4482 | | |
| | | | BOPE Adequate For Drilling And Setting Casing at Depth? | |
| MASP (Gas) (psi) | Max BHP-(0.12*Setting Depth)= | 3468 | YES | 10M BOP stack, 5M annular |
| MASP (Gas/Mud) (psi) | Max BHP-(0.22*Setting Depth)= | 2623 | YES | OK |
| | | | *Can Full Expected Pressure Be Held At Previous Shoe? | |
| Pressure At Previous Shoe | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | 3063 | NO | OK |
| Required Casing/BOPE Test Pressure= | | 7854 | psi | |
| *Max Pressure Allowed @ Previous Casing Shoe= | | 2000 | psi | *Assumes 1psi/ft frac gradient |

| Calculations | L1 String | 5.000 | " | |
|---|---|---|---|---|
| Max BHP (psi) | .052*Setting Depth*MW= | 7238 | | |
| | | | BOPE Adequate For Drilling And Setting Casing at Depth? | |
| MASP (Gas) (psi) | Max BHP-(0.12*Setting Depth)= | 5846 | YES | 10M BOP stack, 5M annular |
| MASP (Gas/Mud) (psi) | Max BHP-(0.22*Setting Depth)= | 4686 | YES | OK |
| | | | *Can Full Expected Pressure Be Held At Previous Shoe? | |
| Pressure At Previous Shoe | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | 6545 | YES | |
| Required Casing/BOPE Test Pressure= | | 9758 | psi | |
| *Max Pressure Allowed @ Previous Casing Shoe= | | 8450 | psi | *Assumes 1psi/ft frac gradient |

| Calculations | String | | " | |
|---|---|---|---|---|
| Max BHP (psi) | .052*Setting Depth*MW= | | | |
| | | | BOPE Adequate For Drilling And Setting Casing at Depth? | |
| MASP (Gas) (psi) | Max BHP-(0.12*Setting Depth)= | | NO | |
| MASP (Gas/Mud) (psi) | Max BHP-(0.22*Setting Depth)= | | NO | |
| | | | *Can Full Expected Pressure Be Held At Previous Shoe? | |
| Pressure At Previous Shoe | Max BHP-.22*(Setting Depth - Previous Shoe Depth)= | | NO | |
| Required Casing/BOPE Test Pressure= | | | psi | |
| *Max Pressure Allowed @ Previous Casing Shoe= | | | psi | *Assumes 1psi/ft frac gradient |



RECEIVED: March 12, 2015

# EP ENERGY E&P COMPANY, L.P.
## Karren Trust 4-30C4
## 43013532680000

strip rot. head

| Formation | Depth (MD) |
|---|---|
| DSHNRVR | 0 |
| BMSW | 1000 |
| GRRV | 3673 |
| GRTN1 | 4361 |
| MHGNY | 5228 |
| LWR GR | 6521 |
| WSTCH | 8381 |

9.625 " Casing
2000 ' MD
2000 ' TVD
Surface ' TOC
1477 ' Tail
10 % Washout
12.25 " Hole

strip cmt

7 " Casing
8450 ' MD
8450 ' TVD
Surface ' TOC
6008 ' Tail
5.8 % Washout
8.75 " Hole

6000'

TOL
8250 ' MD
8250 ' TVD

5 " Liner
11600 ' MD
11600 ' TVD
TOL ' TOC
11600 ' Tail
15 % Washout
6.125 " Hole

Blue Bench 1-13C5 SWD
2.16 mi NNW 4106'-7528'

**EP ENERGY E&P COMPANY, L.P.**
**Karren Trust 4-30C4**
**43013532680000**

| | | | | 1.125 | | | 1 | | 1.8 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MASP | Collapse Strength (psi) | Collapse Load (psi) | Collapse DF | Burst Strength (psi) | Burst Load (psi) | Burst DF | Tension Strength (kips) | Tension DF | Neutral Point (ft) | Tension Air (kips) | Tension Buoyed (kips) |
| **9.625 " Casing** | 176 | 3090 | 416 | 7.44 | 5750 | 2000 | 2.88 | 737 | 9.21 | 1878 | 80.0 | 75.2 |
| | MW (ppg) | Internal Grad. (psi) | Backup Mud (ppg) | Internal Mud (ppg) | Max Shoe Pressure (psi)* | CSG Wt (lbs/ft) | CSG Grade | CSG Collar | Cement Lead (sx) | Lead Yield | Cement Tail (sx) | Tail Yield |
| | 4.0 | 0.12 | | | 3058 | 40.0 | N-80 | LTC | 412 | 2.36 | 195 | 1.30 |
| | MASP | Collapse Strength (psi) | Collapse Load (psi) | Collapse DF | Burst Strength (psi) | Burst Load (psi) | Burst DF | Tension Strength (kips) | Tension DF | Neutral Point (ft) | Tension Air (kips) | Tension Buoyed (kips) |
| **7 " Casing** | 2618 | 9200 | 4477 | 2.05 | 11220 | 6538 | 1.72 | 797 | 3.85 | 7132 | 245.1 | 207.2 |
| | MW (ppg) | Internal Grad. (psi) | Backup Mud (ppg) | Internal Mud (ppg) | Max Shoe Pressure (psi)* | CSG Wt (lbs/ft) | CSG Grade | CSG Collar | Cement Lead (sx) | Lead Yield | Cement Tail (sx) | Tail Yield |
| | 10.2 | 0.22 | | | 6538 | 29.0 | HCP-110 | LTC | 590 | 1.91 | 298 | 1.64 |
| | MASP | Collapse Strength (psi) | Collapse Load (psi) | Collapse DF | Burst Strength (psi) | Burst Load (psi) | Burst DF | Tension Strength (kips) | Tension DF | Neutral Point (ft) | Tension Air (kips) | Tension Buoyed (kips) |
| **5 " Liner** | 4679 | 13418 | 7231 | 1.86 | 13940 | 7231 | 1.93 | 495 | 10.04 | 10985 | 60.3 | 49.3 |
| | MW (ppg) | Internal Grad. (psi) | Backup Mud (ppg) | Internal Mud (ppg) | Max Shoe Pressure (psi)* | CSG Wt (lbs/ft) | CSG Grade | CSG Collar | Cement Lead (sx) | Lead Yield | Cement Tail (sx) | Tail Yield |
| | 12.0 | 0.22 | | | 8250 | 18.0 | HCP-110 | LTC | 199 | 1.52 | | |

# AFFIDAVIT OF DAMAGE SETTLEMENT AND RELEASE

Jacquelyn L. Lynch personally appeared before me, and, being duly sworn, deposes and says:

1. My name is Jacquelyn L. Lynch. I am a Landman for EP Energy E&P Company, L.P., whose address is 1001 Louisiana St., Houston, Texas 77002 ("EP Energy").
2. EP Energy is the operator of the proposed Karren Trust 4-30C4 well (the "Well") to be located in the NW/4NW/4 of Section 30, Township 3 South, Range 4 West, USM, Duchesne County, Utah (the "Drillsite Location"). The surface owner of the Drillsite Location is Glenn A. Karren Family Living Trust whose address is PO Box 170, Duchesne, Utah 84021 (the "Surface Owner"). The Surface Owner's telephone number is (435) 454-4245.
3. EP Energy and the Surface Owner have entered into a Surface Use Agreement dated February 16, 2015 to cover any and all injuries or damages of every character and description sustained by the Surface Owner or Surface Owner's property as a result of operations associated with the drilling of the Well.



FURTHER AFFIANT SAYETH NOT.

Jacquelyn L. Lynch

ACKNOWLEDGMENT

STATE OF TEXAS §
§
COUNTY OF HARRIS §

Sworn to and subscribed before me on this 12th day of March, 2015, by Jacquelyn L. Lynch, as Landman for EP Energy E&P Company, L.P., a Delaware limited partnership.

NOTARY PUBLIC

My Commission Expires:
8/2/2018

Ginger M. Cearley
Notary Public,
State of Texas
Expires:08-02-2018

# ON-SITE PREDRILL EVALUATION
## Utah Division of Oil, Gas and Mining

**Operator** EP ENERGY E&P COMPANY, L.P.
**Well Name** Karren Trust 4-30C4
**API Number** 43013532680000 **APD No** 11071 **Field/Unit** ALTAMONT
**Location: 1/4,1/4** NWNE **Sec** 30 **Tw** 3.0S **Rng** 4.0W 763 FNL 1733 FEL
**GPS Coord (UTM)** 553088 4449755 **Surface Owner** Glen A. Karren Family Living Trust

**Participants**

Glen Karren (surface owner); Kelsey Carter (EP Energy permitting); Randy Fredrick (EP Energy Construction); Jay Van tassel (EP Lands); Dennis Ingram (DOGM)

**Regional/Local Setting & Topography**

The Karren Trust 4-30C4 well is proposed in northeastern Utah and can be accessed by turning north off U.S. Highway 40 onto Highway 87 for 3.2 miles where an existing access road will be upgraded to the east for 0.4 miles and the new road will lead southeast into the well site. This well is located along the eastern side of bench property that drops into a large southeast drainage that continues past Rocky Point into the Duchesne Flood Plain east of that town some 1.20 miles away. The Airport has an east/west existing runway less than a quarter mile to the south, and a north/south runway just over a quarter mile to the west. The immediate surface is nearly flat and shows less than a two-foot drop in elevation across the width of the pad.



**Surface Use Plan**

**Current Surface Use**
Recreational
Wildlfe Habitat

| New Road Miles | Well Pad | Src Const Material | Surface Formation |
|---|---|---|---|
| 0.69 | **Width** 282 **Length** 410 | Onsite | UNTA |

**Ancillary Facilities** N

Reserve pit and disturbance area is 417' wide by 460' long

**Waste Management Plan Adequate?**

**Environmental Parameters**

**Affected Floodplains and/or Wetlands** N

**Flora / Fauna**

Pinion/juniper, sagebrush, prickly pear cactus, bunch grass;

Elk, mule deer, mountain lion, bobcat, coyote, fox, jack and cottontail rabbits, other smaller mammals and birds typical of region.

**Soil Type and Characteristics**

Reddish to light brown in color, fine-grained, sandy loam with some clays and cobbles present

**Erosion Issues** N

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**Sedimentation Issues** N

**Site Stability Issues** Y

Shorten reserve pit from 150' to 140' in width and add volume to length if necessary

**Drainage Diverson Required?** N

**Berm Required?** Y

tanks and location

**Erosion Sedimentation Control Required?** N

**Paleo Survey Run?** N **Paleo Potental Observed?** N **Cultural Survey Run?** N **Cultural Resources?** N

## Reserve Pit

| Site-Specific Factors | | Site Ranking |
|---|---|---|
| **Distance to Groundwater (feet)** | >200 | 0 |
| **Distance to Surface Water (feet)** | 300 to 1000 | 2 |
| **Dist. Nearest Municipal Well (ft)** | 1320 to 5280 | 5 |
| **Distance to Other Wells (feet)** | >1320 | 0 |
| **Native Soil Type** | High permeability | 20 |
| **Fluid Type** | Fresh Water | 5 |
| **Drill Cuttings** | Normal Rock | 0 |
| **Annual Precipitation (inches)** | | 0 |
| **Affected Populations** | 10 to 30 | 10 to 30 |
| **Presence Nearby Utility Conduits** | Present | 15 |
| | **Final Score** | 53 1 Sensitivity Level |



**Characteristics / Requirements**

Proposed reserve pit off the north side in 0.1 feet of fill at corner number "C", measuring 100' wide by 150' long by 8' deep. Reserve pit will be shortened from 110' to 100' to stabilize cobble rock hillside to the north and reduce fill area.

**Closed Loop Mud Required?** **Liner Required?** Y **Liner Thickness** 20 **Pit Underlayment Required?** Y

## Other Observations / Comments

Shorten pit width from 110' to 100' or less to prevent any potential seepage from adjacent, cobble rock hillside and reduce fill area on pit berm. Production tanks on the southwest side of location. This well was staked as close to airport runway as is allowed.

Dennis Ingram
**Evaluator**

2/26/2015
**Date / Time**

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# Application for Permit to Drill
# Statement of Basis
## Utah Division of Oil, Gas and Mining

| APD No | API WellNo | Status | Well Type | Surf Owner | CBM |
|---|---|---|---|---|---|
| 11071 | 43013532680000 | LOCKED | OW | P | No |

| | | | |
|---|---|---|---|
| **Operator** | EP ENERGY E&P COMPANY, L.P. | **Surface Owner-APD** | Glen A. Karren Family Living Trust |
| **Well Name** | Karren Trust 4-30C4 | **Unit** | |
| **Field** | ALTAMONT | **Type of Work** | DRILL |
| **Location** | NWNE 30 3S 4W U 763 FNL 1733 FEL GPS Coord (UTM) 553093E 4449745N | | |

**Geologic Statement of Basis**

EP proposes to set 40 feet of conductor and 2,000 feet of surface casing both of which will be cemented to surface. The surface hole will be drilled utilizing air/fresh water mud. The estimated depth to the base of moderately saline ground water is 1,000 feet. A search of Division of Water Rights records indicates that there are 23 water wells within a 10,000 foot radius of the center of Section 30. These wells probably produce water from the Duchesne River Formation and associated alluvium. Depths of the wells fall in the range of 29-500 feet. Depth is not listed for one well. The wells are listed as being used for irrigation, stock watering, municipal and domestic. The proposed drilling, casing and cement program should adequately protect the highly used Duchesne River aquifer.

Brad Hill — **APD Evaluator**

3/3/2015 — **Date / Time**



**Surface Statement of Basis**

There aren't any drainage issues crossing the proposed well pad; however, a large, deep drainage is located immediately north of the well pad and drains southeasterly into the Duchesne River Corridor. The production facility is proposed along the south side of the location, and the operator shall berm both the tanks and the location to prevent fluids from leaving location.

A reserve pit is planned for the north side of location between corners #5 & #7 and has a large downhill slope into the adjacent canyon. Furthermore, cobble rocks litter the ground as the topography turns downward to the north. Therefore the operator shall shorten the width of the proposed pit from 110' to 100' or less to stabilize the north side. Some of the pit spoils shall also be piled to the north but not beyond the disturbance line where it will run down slope. The length of this pit can be extended by ten feet to make up for the loss along the north side. The underlying ground shows round cobbles, sandstone and some clays, and therefore the operator shall install a felt pad underlayment before installing a 20 mil synthetic liner to prevent leaks or seepage of the drilling fluids.

A presite was scheduled and performed on February 26, 2015 to take input and address issues regarding the permitting of the Karren Trust 4-30C4 well. Glen Karren was shown as the landowner of record and was therefore invited to participate. EP Energy was still working with the landowner to gain a surface damage or landowner agreement, and this permit should not be released until the State has received proof of that document.

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| Dennis Ingram | 2/26/2015 |
|---|---|
| **Onsite Evaluator** | **Date / Time** |

**Conditions of Approval / Application for Permit to Drill**

| Category | Condition |
|---|---|
| Pits | A synthetic liner with a minimum thickness of 20 mils with a felt subliner shall be properly installed and maintained in the reserve pit. This pit shall also be fenced to prevent deer and wildlife from entering same. |
| Pits | The reserve pit should be located on the north side of the location. Also shorthen width from 110' to 100' or less |
| Surface | The well site shall be bermed to prevent fluids from entering or leaving the pad. |



RECEIVED: March 12, 2015

# WORKSHEET
# APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 2/12/2015 **API NO. ASSIGNED:** 43013532680000

**WELL NAME:** Karren Trust 4-30C4

**OPERATOR:** EP ENERGY E&P COMPANY, L.P. (N3850) **PHONE NUMBER:** 713 997-5038

**CONTACT:** Maria S. Gomez

**PROPOSED LOCATION:** NWNE 30 030S 040W **Permit Tech Review:** ☑

**SURFACE:** 0763 FNL 1733 FEL **Engineering Review:** ☑

**BOTTOM:** 0763 FNL 1733 FEL **Geology Review:** ☑

**COUNTY:** DUCHESNE

**LATITUDE:** 40.19642 **LONGITUDE:** -110.37622

**UTM SURF EASTINGS:** 553093.00 **NORTHINGS:** 4449745.00

**FIELD NAME:** ALTAMONT

**LEASE TYPE:** 4 - Fee

**LEASE NUMBER:** Fee **PROPOSED PRODUCING FORMATION(S):** GREEN RIVER(LWR)-WASATCH

**SURFACE OWNER:** 4 - Fee **COALBED METHANE:** NO



**RECEIVED AND/OR REVIEWED:**

- ☑ **PLAT**
- ☑ **Bond:** STATE/FEE - 400JU0708
- ☐ **Potash**
- ☐ **Oil Shale 190-5**
- ☐ **Oil Shale 190-3**
- ☐ **Oil Shale 190-13**
- ☑ **Water Permit:** Duchesne City
- ☐ **RDCC Review:**
- ☑ **Fee Surface Agreement**
- ☐ **Intent to Commingle**

**Commingling Approved**

**LOCATION AND SITING:**

- ☐ **R649-2-3.**

**Unit:**

- ☐ **R649-3-2. General**
- ☐ **R649-3-3. Exception**
- ☑ **Drilling Unit**

**Board Cause No:** Cause 139-124

**Effective Date:** 11/6/2014

**Siting:** 8 WELLS PER SECTION

- ☐ **R649-3-11. Directional Drill**

**Comments:** Presite Completed

**Stipulations:**
5 - Statement of Basis - bhill
7 - BOPE Test - daynedoucet
12 - Cement Volume (3) - ddoucet
25 - Surface Casing - ddoucet

RECEIVED: March 12, 2015

GARY R. HERBERT
*Governor*
SPENCER J. COX
*Lieutenant Governor*

# State of Utah
**DEPARTMENT OF NATURAL RESOURCES**
MICHAEL R. STYLER
*Executive Director*
**Division of Oil, Gas and Mining**
JOHN R. BAZA
*Division Director*

# Permit To Drill
**********

**Well Name:** Karren Trust 4-30C4
**API Well Number:** 43013532680000
**Lease Number:** Fee
**Surface Owner:** FEE (PRIVATE)
**Approval Date:** 3/12/2015

**Issued to:**
EP ENERGY E&P COMPANY, L.P., 1001 Louisiana, Houston, TX 77002

**Authority:**
Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 139-124. The expected producing formation or pool is the GREEN RIVER(LWR)-WASATCH Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

**Duration:**
This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

**General:**
Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

**Conditions of Approval:**
Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Cement volume for the 7 inch casing shall be determined from actual hole diameter in order to place tail cement from the pipe setting depth back to 6000' MD and lead cement back to surface as indicated in the submitted drilling plan.

A properly lubricated rotating head shall be used while air drilling.

Surface casing shall be cemented to the surface.

**Additional Approvals:**
The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan - contact Dustin Doucet
- Significant plug back of the well - contact Dustin Doucet
- Plug and abandonment of the well - contact Dustin Doucet

**Notification Requirements:**
The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well - contact Carol Daniels
  OR
  submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website
  at http://oilgas.ogm.utah.gov
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing - contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program
  - contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well - contact Dan Jarvis

**Contact Information:**
The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office
  801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office
  801-231-8956 - after office hours

**Reporting Requirements:**
All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) - due within 5 days of spudding the well
- Monthly Status Report (Form 9) - due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) - due prior to implementation
- Written Notice of Emergency Changes (Form 9) - due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) - due prior to implementation
- Report of Water Encountered (Form 7) - due within 30 days after completion
- Well Completion Report (Form 8) - due within 30 days after completion or plugging

**Approved By:**

**Approved By:**

For John Rogers
Associate Director, Oil & Gas

CONFIDENTIAL

[redacted]

Carol Daniels <caroldaniels@utah.gov>

NWNE SEC 30 T03S R04W FEE LEASE

# 24 hour notice running casing & cementing

1 message

**LANDRIG009 (Precision 406)** <LANDRIG009@epenergy.com> Fri, Mar 27, 2015 at 6:40 AM
To: "alexishuefner@utah.gov" <alexishuefner@utah.gov>, "MacAfee, Bradley D" <Brad.MacAfee@epenergy.com>, "caroldaniels@utah.gov" <caroldaniels@utah.gov>, "dennisingram@utah.gov" <dennisingram@utah.gov>, "Dodd, Robert W" <Robert.Dodd@epenergy.com>, "Mangum, Danny R (Contractor)" <danny.mangum@epenergy.com>, "Gomez, Maria S" <Maria.Gomez@epenergy.com>, "Derden, Roy Lynn (Contractor)" <Roy.Derden@epenergy.com>

RE: EP ENERGY

KAREN TRUST 4-30C4

API # 43013532680000

ALTAMONT FIELD

DUCHESNE COUNTY

Leon Ross Drilling moved in and commenced drilling the 12¼" surface hole @ 7:30 pm on 3/825/2015. We plan on running and cementing 9-5/8" Surface Casing to +/- 2,120' within 24hrs.

Thanks,

Lloyd Rowell / Morgan Harden

EP Energy / PD 406

713-997-1220 (Rig)

435-823-1764 (Cell)

[redacted]

**Alexis Huefner <alexishuefner@utah.gov>**

# 24 HR SPUD NOTICE 20" CASING.

1 message

**LANDRIG009 (Precision 406)** <LANDRIG009@epenergy.com> Tue, Mar 24, 2015 at 7:40 AM

To: "alexishuefner@utah.gov" <alexishuefner@utah.gov>, "MacAfee, Bradley D" <Brad.MacAfee@epenergy.com>, "caroldaniels@utah.gov" <caroldaniels@utah.gov>, "dennisingram@utah.gov" <dennisingram@utah.gov>, "Dodd, Robert W" <Robert.Dodd@epenergy.com>, "Mangum, Danny R (Contractor)" <danny.mangum@epenergy.com>, "Gomez, Maria S" <Maria.Gomez@epenergy.com>, "Derden, Roy Lynn (Contractor)" <Roy.Derden@epenergy.com>

RE: EP ENERGY

**KAREN TRUST 4-30C4**

**API # 43013532680000**

ALTAMONT FIELD

DUCHESNE COUNTY

763 FNL 1733 FEL
NWNE 30 3S 4W CONFIDENTIAL

Leon Ross Drilling spudded the well @ 10:00hrs on **3/24/2015**. We plan on running and cementing 20" Conductor Casing to +/- 40' within 24hrs.

Thanks,

Lloyd Rowell / Morgan Harden

EP Energy / PD 406

713-997-1220 (Rig)

435-823-1764 (Cell)

CONFIDENTIAL

[redacted]

Carol Daniels <caroldaniels@utah.gov>

NWNE SEC 30 T03S R04W FEE LEASE

# 24 HR NOTICE RUNNING CASING/ CEMENTING.

1 message

**LANDRIG009 (Precision 406)** <LANDRIG009@epenergy.com> Sun, Apr 19, 2015 at 4:01 AM
To: "alexishuefner@utah.gov" <alexishuefner@utah.gov>, "MacAfee, Bradley D" <Brad.MacAfee@epenergy.com>, "caroldaniels@utah.gov" <caroldaniels@utah.gov>, "dennisingram@utah.gov" <dennisingram@utah.gov>, "Dodd, Robert W" <Robert.Dodd@epenergy.com>, "Mangum, Danny R (Contractor)" <danny.mangum@epenergy.com>, "Gomez, Maria S" <Maria.Gomez@epenergy.com>, "Derden, Roy Lynn (Contractor)" <Roy.Derden@epenergy.com>

RE: EP ENERGY

~~KAREN~~ KARREN TRUST 4-30C4

API # 43013532680000

ALTAMONT FIELD

DUCHESNE COUNTY

We plan on running and cementing 7" 29# P-110HC LT&C Intermediate Casing to +/- 8,453' within 24hrs

Thanks,

Lloyd Rowell / Morgan Harden

EP Energy / PD 406

713-997-1220 (Rig)

435-823-1764 (Cell)

CONFIDENTIAL

[redacted]

Carol Daniels <caroldaniels@utah.gov>

NWNE S-30 T03S R04W FEE LEASE

# 24hr Notice Run & Cement Casing

1 message

**LANDRIG009 (Precision 406)** <LANDRIG009@epenergy.com> Thu, Apr 23, 2015 at 5:24 AM
To: "alexishuefner@utah.gov" <alexishuefner@utah.gov>, "MacAfee, Bradley D" <Brad.MacAfee@epenergy.com>, "caroldaniels@utah.gov" <caroldaniels@utah.gov>, "dennisingram@utah.gov" <dennisingram@utah.gov>, "Dodd, Robert W" <Robert.Dodd@epenergy.com>, "Mangum, Danny R (Contractor)" <danny.mangum@epenergy.com>, "Gomez, Maria S" <Maria.Gomez@epenergy.com>, "Derden, Roy Lynn (Contractor)" <Roy.Derden@epenergy.com>

RE: EP ENERGY
KAREN
KAREN TRUST 4-30C4

API # 43013532680000

ALTAMONT FIELD

DUCHESNE COUNTY

We plan on running and cementing 5" 18# P-110HC STL Production liner to +/- 11,103' within 24hrs.

Thanks,

Lloyd Rowell / Morgan Harden

EP Energy / PD 406

713-997-1220 (Rig)

435-823-1764 (Cell)

# STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

**5.LEASE DESIGNATION AND SERIAL NUMBER:** Fee

## SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

**6. IF INDIAN, ALLOTTEE OR TRIBE NAME:**

**7.UNIT or CA AGREEMENT NAME:**

**1. TYPE OF WELL**
Oil Well

**8. WELL NAME and NUMBER:**
Karren Trust 4-30C4

**2. NAME OF OPERATOR:**
EP ENERGY E&P COMPANY, L.P.

**9. API NUMBER:**
43013532680000

**3. ADDRESS OF OPERATOR:**
1001 Louisiana , Houston, TX, 77002

**PHONE NUMBER:**
713 997-5038 Ext

**9. FIELD and POOL or WILDCAT:**
ALTAMONT

**4. LOCATION OF WELL**
**FOOTAGES AT SURFACE:**
0763 FNL 1733 FEL
**QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:**
Qtr/Qtr: NWNE Section: 30 Township: 03.0S Range: 04.0W Meridian: U

**COUNTY:**
DUCHESNE

**STATE:**
UTAH

**11.**
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | |
|---|---|---|---|
| ✓ NOTICE OF INTENT<br>Approximate date work will start:<br>5/11/2015 | ☐ ACIDIZE | ☐ ALTER CASING | ☐ CASING REPAIR |
| | ☐ CHANGE TO PREVIOUS PLANS | ☐ CHANGE TUBING | ☐ CHANGE WELL NAME |
| | ☐ CHANGE WELL STATUS | ☐ COMMINGLE PRODUCING FORMATIONS | ☐ CONVERT WELL TYPE |
| ☐ SUBSEQUENT REPORT<br>Date of Work Completion: | ☐ DEEPEN | ☐ FRACTURE TREAT | ☐ NEW CONSTRUCTION |
| | ☐ OPERATOR CHANGE | ☐ PLUG AND ABANDON | ☐ PLUG BACK |
| | ☐ PRODUCTION START OR RESUME | ☐ RECLAMATION OF WELL SITE | ☐ RECOMPLETE DIFFERENT FORMATION |
| ☐ SPUD REPORT<br>Date of Spud: | ☐ REPERFORATE CURRENT FORMATION | ☐ SIDETRACK TO REPAIR WELL | ☐ TEMPORARY ABANDON |
| | ☐ TUBING REPAIR | ☐ VENT OR FLARE | ☐ WATER DISPOSAL |
| ☐ DRILLING REPORT<br>Report Date: | ☐ WATER SHUTOFF | ☐ SI TA STATUS EXTENSION | ☐ APD EXTENSION |
| | ☐ WILDCAT WELL DETERMINATION | ✓ OTHER | OTHER: Initial Completion |

**12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.**

EP is completing into the Wasatch. Please see attached for details.

Approved by the
Utah Division of
Oil, Gas and Mining
May 27, 2015

Date: _____

By: _____

| NAME (PLEASE PRINT) | PHONE NUMBER | TITLE |
|---|---|---|
| Maria S. Gomez | 713 997-5038 | Principal Regulatory Analyst |
| **SIGNATURE** | | **DATE** |
| N/A | | 5/13/2015 |

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# ***Karren Trust 4-30C4***

## Initial Completion

## API # : 43013532680000

**The following precautions will be taken until the RCA for the Conover is completed:**

**1.** Review torque turning and running of the 7" and 5" liner of anomalies.

**2.** Test and chart casing for 30 minutes, noting pressure if any on surface casing.

**3.** Test all lubricators, valves and BOP's to working pressure.

**4.** A frac tree with BOP equipment will be utilized during the stimulation treatment.

**5**. Monitor the surface casing during frac:

**a.** Lay a flowline to the flow back tank and keep the valve open.

**b.** This line will remain in place until a wire line set retrievable packer is in place isolating the casing after the frac.

**6**. 2 7/8" tubing will be run to isolate the casing during the flow back of the well.

**7.** Well pressure and annulus pressure would be monitored during this time until the well is ready for pump.

**Completion Information (Wasatch Formation)**

**Stage #1** RU WL unit with 10K lubricator and test to 10,000 psi with glycol. Perforations from ~10603' – 10946' with ~5000 gallons of 15% HCL acid, ~3000 # of 100 mesh sand and ~150000 # of TLC 30/50. Total clean water volume is 3647 bbls.

**Stage #2** RU WL unit with 10K lubricator and test to 10,000 psi with glycol. Perforations from ~10211' – 10521' with ~5000 gallons of 15% HCL acid, ~3000 # of 100 mesh sand and ~150000 # of TLC 30/50. Total clean water volume is 3640 bbls.

**Stage #3** RU WL unit with 10K lubricator and test to 10,000 psi with glycol. Perforations from ~9876' – 10184' with ~5000 gallons of 15% HCL acid, ~3000 # of 100 mesh sand and ~150000 # of TLC 30/50. Total clean water volume is 3634 bbls.

**Stage #4** RU WL unit with 10K lubricator and test to 10,000 psi with glycol. Perforations from ~9613' – 9846' with ~5000 gallons of 15% HCL acid, ~3000 # of 100 mesh sand and ~150000 # of TLC 30/50. Total clean water volume is 3630 bbls.

**Stage #5** RU WL unit with 10K lubricator and test to 10,000 psi with glycol. Perforations from ~9337' – 9581' with ~5000 gallons of 15% HCL acid, ~3000 # of 100 mesh sand and ~150000 # of TLC 30/50. Total clean water volume is 3625 bbls.

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**Stage #6** RU WL unit with 10K lubricator and test to 10,000 psi with glycol. Perforations from ~9087' – 9307' with ~5000 gallons of 15% HCL acid, ~3000 # of 100 mesh sand and ~150000 # of TLC 30/50. Total clean water volume is 3620 bbls.

**Stage #7** RU WL unit with 10K lubricator and test to 10,000 psi with glycol. Perforations from ~8797' – 9050' with ~5000 gallons of 15% HCL acid, ~3000 # of 100 mesh sand and ~150000 # of White 30/50. Total clean water volume is 3615 bbls.

**Stage #8** RU WL unit with 10K lubricator and test to 10,000 psi with glycol. Perforations from ~8521' – 8760' with ~5000 gallons of 15% HCL acid, ~3000 # of 100 mesh sand and ~150000 # of White 30/50. Total clean water volume is 3610 bbls.

## Stimulation Summary

| | Top Perf | Btm. Perf | Gross Interval | Plug Depth | Net Perf Length | Total Shots | Perf Intervals | Type of Prop | Lbs of Prop | Lbs/ft | Lbs of 100 Mesh | Gals of HCL (15%) | BBLs of Clean H2O | BBLs of Slurry |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stage #1 | 10,603 | 10,946 | 343 | NA | 23 | 69 | 17 | TLC 30/50 | 150,000 | 437 | 3,000 | 5,000 | 3,647 | 4,048 |
| Stage #2 | 10,211 | 10,521 | 310 | 10,536 | 23 | 69 | 17 | TLC 30/50 | 150,000 | 484 | 3,000 | 5,000 | 3,640 | 4,041 |
| Stage #3 | 9,876 | 10,184 | 308 | 10,199 | 23 | 69 | 17 | TLC 30/50 | 150,000 | 487 | 3,000 | 5,000 | 3,634 | 4,035 |
| Stage #4 | 9,613 | 9,846 | 233 | 9,861 | 23 | 69 | 17 | TLC 30/50 | 150,000 | 644 | 3,000 | 5,000 | 3,630 | 4,030 |
| Stage #5 | 9,337 | 9,581 | 244 | 9,596 | 21 | 63 | 17 | TLC 30/50 | 150,000 | 615 | 3,000 | 5,000 | 3,625 | 4,025 |
| Stage #6 | 9,087 | 9,307 | 220 | 9,322 | 22 | 66 | 17 | TLC 30/50 | 150,000 | 682 | 3,000 | 5,000 | 3,620 | 4,021 |
| Stage #7 | 8,797 | 9,050 | 253 | 9,065 | 23 | 69 | 17 | White 30/50 | 150,000 | 593 | 3,000 | 5,000 | 3,615 | 4,027 |
| Stage #8 | 8,521 | 8,760 | 239 | 8,775 | 23 | 69 | 17 | White 30/50 | 150,000 | 628 | 3,000 | 5,000 | 3,610 | 4,022 |
| **Average per Stage** | | | **269** | | **23** | **68** | **17** | | **150,000** | **571** | **3,000** | **5,000** | **3,628** | **4,031** |
| **Totals per Well** | | | **2,150** | | **181** | **543** | **136** | | **1,200,000** | | **24,000** | **40,000** | **29,021** | **32,250** |

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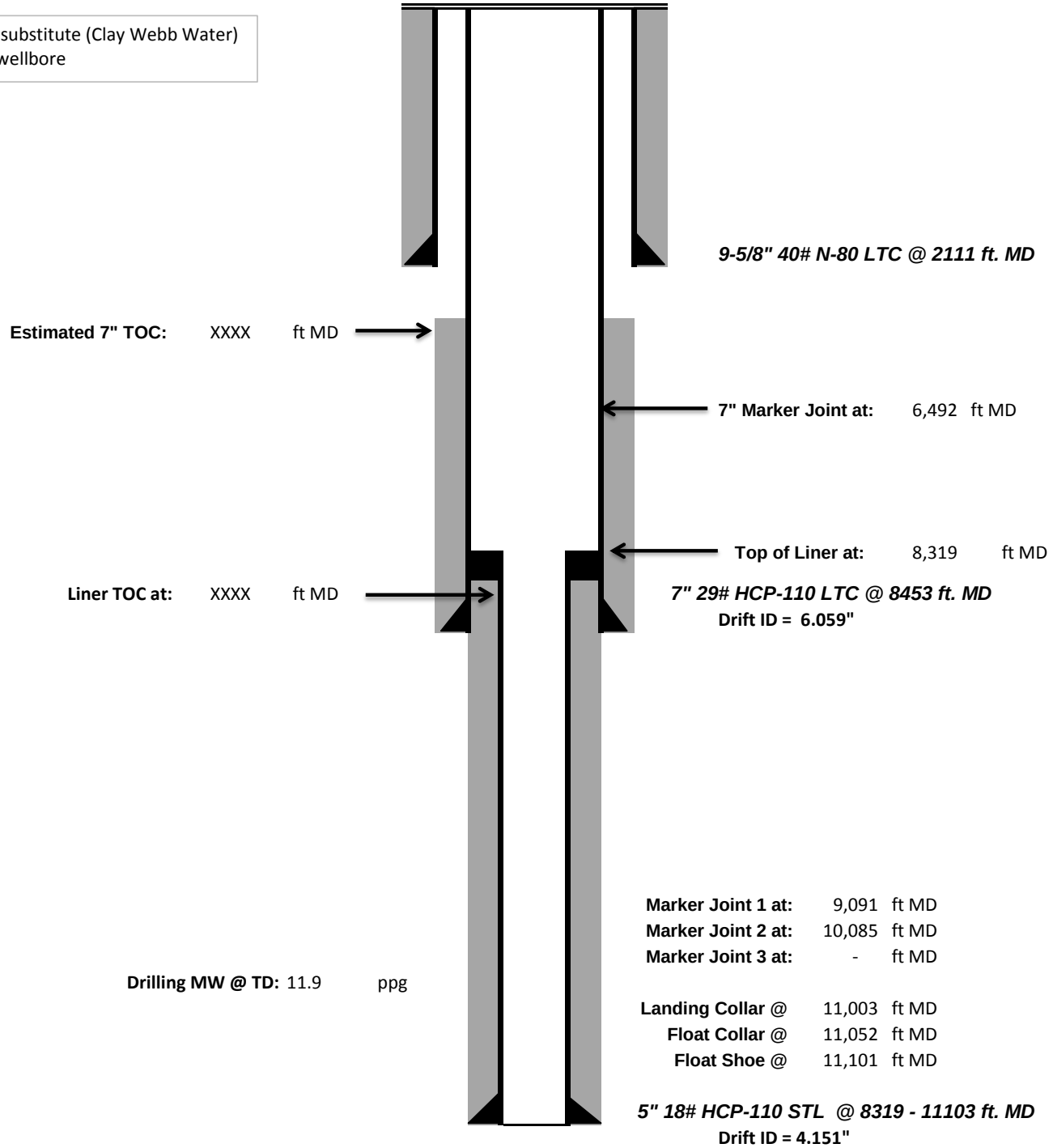
EP ENERGY

## Pre-Completion Wellbore Schematic

| | | | |
|---|---|---|---|
| **Well Name:** | **Karren Trust 4-30C4** | **Last Updated:** | *4/27/2015* |
| **Company Name:** | *EP Energy* | **By:** | *David Gregory* |
| **Field, County, State:** | *Altamont, Duchesne, Utah* | **TD:** | *11,101* |
| **Surface Location:** | *Lat: 40°11'47.49247" N Long: 110°22'31.93997" W* | **API:** | *43013532680000* |
| **Producing Zone(s):** | *Wasatch* | **AFE:** | *163172* |

8.43 ppg KCL substitute (Clay Webb Water) water in the wellbore



*9-5/8" 40# N-80 LTC @ 2111 ft. MD*

**Estimated 7" TOC:** XXXX ft MD

**7" Marker Joint at:** 6,492 ft MD

**Top of Liner at:** 8,319 ft MD

**Liner TOC at:** XXXX ft MD

*7" 29# HCP-110 LTC @ 8453 ft. MD*
**Drift ID = 6.059"**

**Marker Joint 1 at:** 9,091 ft MD
**Marker Joint 2 at:** 10,085 ft MD
**Marker Joint 3 at:** - ft MD

**Drilling MW @ TD:** 11.9 ppg

**Landing Collar @** 11,003 ft MD
**Float Collar @** 11,052 ft MD
**Float Shoe @** 11,101 ft MD

*5" 18# HCP-110 STL @ 8319 - 11103 ft. MD*
**Drift ID = 4.151"**

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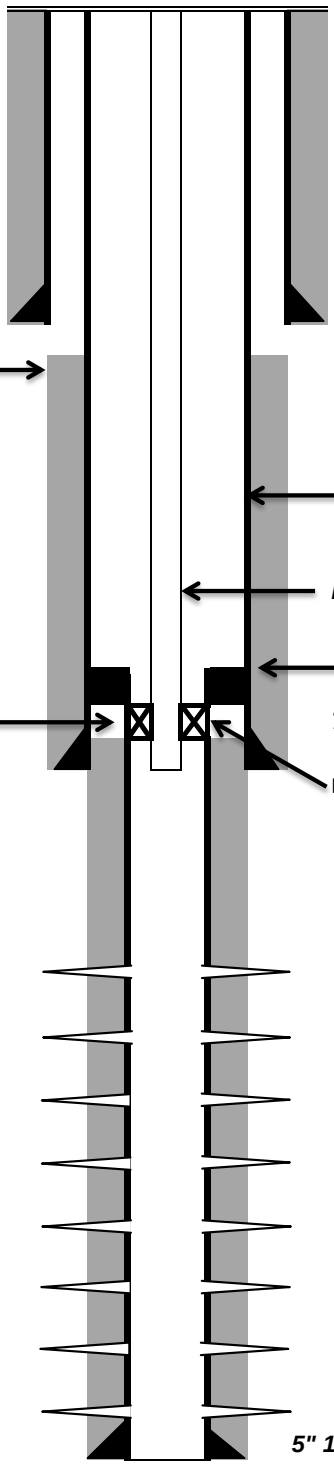
EP ENERGY

## Post-Completion Wellbore Schematic

| | | | |
|---|---|---|---|
| **Well Name:** | **Karren Trust 4-30C4** | **Last Updated:** | *4/27/2015* |
| **Company Name:** | *EP Energy* | **By:** | *David Gregory* |
| **Field, County, State:** | *Altamont, Duchesne, Utah* | **TD:** | *11,101* |
| **Surface Location:** | *Lat: 40°11'47.49247" N Long: 110°22'31.93997" W* | **API:** | *43013532680000* |
| **Producing Zone(s):** | *Wasatch* | **AFE:** | *163172* |

8.43 ppg KCL substitute (Clay Webb Water) water in the wellbore



*9-5/8" 40# N-80 LTC @ 2111 ft. MD*

**Estimated TOC at:** XXXX ft MD

**7" Marker Joint at:** 6,492 ft MD

*Production Tubing: 2 7/8"*

**Top of Liner at:** 8,319 ft MD

**Liner TOC at:** XXXX ft MD

*7" 29# HCP-110 LTC @ 8453 ft. MD*

**Drift ID = 6.059"**

**Production Packer @ 8419 ft MD**

**Initial Completion Perf Information**

| | | |
|---|---|---|
| **Stage #8** | **8521 - 8760** | **23' /69 shots** |
| | 5000 gal HCL & 150000 lbs White 30/50 | |
| **Stage #7** | **8797 - 9050** | **23' /69 shots** |
| | 5000 gal HCL & 150000 lbs White 30/50 | |
| **Stage #6** | **9087 - 9307** | **22' /66 shots** |
| | 5000 gal HCL & 150000 lbs TLC 30/50 | |
| **Stage #5** | **9337 - 9581** | **21' /63 shots** |
| | 5000 gal HCL & 150000 lbs TLC 30/50 | |
| **Stage #4** | **9613 - 9846** | **23' /69 shots** |
| | 5000 gal HCL & 150000 lbs TLC 30/50 | |
| **Stage #3** | **9876 - 10184** | **23' /69 shots** |
| | 5000 gal HCL & 150000 lbs TLC 30/50 | |
| **Stage #2** | **10211 - 10521** | **23' /69 shots** |
| | 5000 gal HCL & 150000 lbs TLC 30/50 | |
| **Stage #1** | **10603 - 10946** | **23' /69 shots** |
| | 5000 gal HCL & 150000 lbs TLC 30/50 | |

**Marker Joint 1 @:** 9,091 ft MD
**Marker Joint 2 @:** 10,085 ft MD
**Marker Joint 2 @:** - ft MD

**Landing Collar @** 11,003 ft MD
**Float Collar @** 11,052 ft MD
**Float Shoe @** 11,101 ft MD

*5" 18# HCP-110 STL @ 8319 - 11103 ft. MD*

**Drift ID = 4.151"**

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Sundry Number: 63874 API Well Number: 43013532680000

Reset Form

**STATE OF UTAH**
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

AMENDED REPORT ☐ (highlight changes) FORM 8

# WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. LEASE DESIGNATION AND SERIAL NUMBER:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

1a. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ DRY ☐ OTHER

7. UNIT or CA AGREEMENT NAME

b. TYPE OF WORK: NEW WELL ☑ HORIZ. LATS. ☐ DEEP-EN ☐ RE-ENTRY ☐ DIFF. RESVR. ☐ OTHER

8. WELL NAME and NUMBER: Karren Trust 4-30C4

2. NAME OF OPERATOR: EP Energy E&P Company, L.P.

9. API NUMBER: 4301353268

3. ADDRESS OF OPERATOR: 1001 Louisiana CITY Houston STATE TX ZIP 77002

PHONE NUMBER: (713) 997-5038

10 FIELD AND POOL, OR WILDCAT: Altamont

4. LOCATION OF WELL (FOOTAGES)
AT SURFACE: 763' FNL & 1733' FEL
AT TOP PRODUCING INTERVAL REPORTED BELOW: 1769' FNL & 2992' FEL
AT TOTAL DEPTH: 1878' FNL & 3367' FEL

11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: NWNE 30 3S 4W U

12. COUNTY: Duchesne

13. STATE: UTAH

14. DATE SPUDDED: 3/26/2015

15. DATE T.D. REACHED: 4/22/2015

16. DATE COMPLETED: 5/15/2015 ABANDONED ☐ READY TO PRODUCE ☑

17. ELEVATIONS (DF, RKB, RT, GL): 5834

18. TOTAL DEPTH: MD 11,103 TVD 11,094

19. PLUG BACK T.D.: MD TVD

20. IF MULTIPLE COMPLETIONS, HOW MANY? *

21. DEPTH BRIDGE PLUG SET: MD TVD

22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each)
Sonic, Gamma Ray, Resistivity & Neutron Density

23.
WAS WELL CORED? NO ☑ YES ☐ (Submit analysis)
WAS DST RUN? NO ☑ YES ☐ (Submit report)
DIRECTIONAL SURVEY? NO ☐ YES ☑ (Submit copy)

**24. CASING AND LINER RECORD (Report all strings set in well)**

| HOLE SIZE | SIZE/GRADE | WEIGHT (#/ft.) | TOP (MD) | BOTTOM (MD) | STAGE CEMENTER DEPTH | CEMENT TYPE & NO. OF SACKS | SLURRY VOLUME (BBL) | CEMENT TOP ** | AMOUNT PULLED |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| 12.25 | 9.625 N80 | 40 | 0 | 2,111 | | G 660 | 1,350 | 0 | |
| 8.75 | 7" HCP1: | 29 | 0 | 8,453 | | G 975 | 1,781 | 1800 | |
| 6.125 | 5" HCP1: | 18 | 8,584 | 11,103 | | G 215 | 327 | 8584 | |
| | | | | | | | | | |
| | | | | | | | | | |

**25. TUBING RECORD**

| SIZE | DEPTH SET (MD) | PACKER SET (MD) | SIZE | DEPTH SET (MD) | PACKER SET (MD) | SIZE | DEPTH SET (MD) | PACKER SET (MD) |
|---|---|---|---|---|---|---|---|---|
| 2.875 | 8,398 | 8,387 | | | | | | |

**26. PRODUCING INTERVALS**

| FORMATION NAME | TOP (MD) | BOTTOM (MD) | TOP (TVD) | BOTTOM (TVD) |
|---|---|---|---|---|
| (A) Wasatch | 8,336 | 11,103 | 8,330 | 11,094 |
| (B) | | | | |
| (C) | | | | |
| (D) | | | | |

**27. PERFORATION RECORD**

| INTERVAL (Top/Bot - MD) | | SIZE | NO. HOLES | PERFORATION STATUS |
|---|---|---|---|---|
| 10,601 | 10,946 | .40 | 69 | Open ☑ Squeezed ☐ |
| 10,209 | 10,541 | .40 | 75 | Open ☑ Squeezed ☐ |
| 9,870 | 10,180 | .40 | 69 | Open ☑ Squeezed ☐ |
| 9,605 | 9,839 | .40 | 69 | Open ☑ Squeezed ☐ |

**28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.** See attached for further information on #27 & #28.

| DEPTH INTERVAL | AMOUNT AND TYPE OF MATERIAL |
|---|---|
| 10601-10946 | 5000 gal 15% HCL acid, 3100# 100 mesh, 150400# 30/50 TLC |
| 10919-11264 | 5000 gal 15% HCL acid, 3100# 100 mesh, 150400# 30/50 TLC |
| 10563-10874 | 5000 gal 15% HCL acid, 3000# 100 mesh, 150500# 30/50 TLC |

**29. ENCLOSED ATTACHMENTS:** All logs are submitted to UDOGM by vendor.

☐ ELECTRICAL/MECHANICAL LOGS ☐ GEOLOGIC REPORT ☐ DST REPORT ☐ DIRECTIONAL SURVEY
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☐ CORE ANALYSIS ☐ OTHER:

**30. WELL STATUS:** Prod

(5/2000)

**(CONTINUED ON BACK)**

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**31. INITIAL PRODUCTION**

**INTERVAL A (As shown in item #26)**

| DATE FIRST PRODUCED: | TEST DATE: | HOURS TESTED: | TEST PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | PROD. METHOD: |
|---|---|---|---|---|---|---|---|
| 5/16/2015 | 5/26/2015 | 24 | | 429 | 447 | 450 | FL |

| CHOKE SIZE: | TBG. PRESS. | CSG. PRESS. | API GRAVITY | BTU – GAS | GAS/OIL RATIO | 24 HR PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | INTERVAL STATUS: |
|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 1,236 | 0 | 45.00 | 1 | 1 | | 429 | 447 | 450 | PROD |

**INTERVAL B (As shown in item #26)**

| DATE FIRST PRODUCED: | TEST DATE: | HOURS TESTED: | TEST PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | PROD. METHOD: |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| CHOKE SIZE: | TBG. PRESS. | CSG. PRESS. | API GRAVITY | BTU – GAS | GAS/OIL RATIO | 24 HR PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | INTERVAL STATUS: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

**INTERVAL C (As shown in item #26)**

| DATE FIRST PRODUCED: | TEST DATE: | HOURS TESTED: | TEST PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | PROD. METHOD: |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| CHOKE SIZE: | TBG. PRESS. | CSG. PRESS. | API GRAVITY | BTU – GAS | GAS/OIL RATIO | 24 HR PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | INTERVAL STATUS: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

**INTERVAL D (As shown in item #26)**

| DATE FIRST PRODUCED: | TEST DATE: | HOURS TESTED: | TEST PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | PROD. METHOD: |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| CHOKE SIZE: | TBG. PRESS. | CSG. PRESS. | API GRAVITY | BTU – GAS | GAS/OIL RATIO | 24 HR PRODUCTION RATES: → | OIL – BBL: | GAS – MCF: | WATER – BBL: | INTERVAL STATUS: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

**32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)**

Sold

**33. SUMMARY OF POROUS ZONES (Include Aquifers):**

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

**34. FORMATION (Log) MARKERS:**

| Formation | Top (MD) | Bottom (MD) | Descriptions, Contents, etc. | Name | Top (Measured Depth) |
|---|---|---|---|---|---|
| | | | | Upper Green River | 3,673 |
| | | | | Middle Green River | 5,208 |
| | | | | Lower Green River | 6,521 |
| | | | | Wasatch | 8,336 |

**35. ADDITIONAL REMARKS (Include plugging procedure)**

**36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.**

NAME (PLEASE PRINT) Maria S. Gomez TITLE Principal Regulatory Analyst

SIGNATURE Maria S. Gomez Digitally signed by Maria Gomez DN: cn=Maria Gomez, o=EP Energy, ou=Regulatory, email=maria.gomez@epenergy.com, c=US Date: 2015.06.14 18:41:31 -05'00' DATE 6/14/2015

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

** ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

(5/2000)

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**Attachment to Well Completion Report**

**Form 8 Dated June 14, 2015**

**Well Name: Karren Trust 4-30C4**

**Items #27 and #28 Continued**

## 27. Perforation Record

| Interval (Top/Bottom – MD) | Size | No. of Holes | Perf. Status |
|---|---|---|---|
| 9327’-9573’ | .40 | 63 | Open |
| 9073’-9297’ | .40 | 66 | Open |
| 8783’-9039’ | .40 | 69 | Open |
| 8587’-8746’ | .40 | 45 | Open |

## 28. Acid, Fracture, Treatment, Cement Squeeze, Etc.

| Depth Interval | Amount and Type of Material |
|---|---|
| 9605’-9839’ | 5000 gal acid, 3000# 100 mesh, 150600# 30/50 TLC |
| 9327’-9573’ | 5000 gal acid, 3000# 100 mesh, 150700# 30/50 TLC |
| 9073’-9297’ | 5000 gal acid, 3000# 100 mesh, 150620# 30/50 TLC |
| 8783’-9039’ | 5000 gal acid, 3000# 100 mesh, 150660# 30/50 White |
| 8587’-8746’ | 5000 gal acid, 2800# 100 mesh, 150160# 30/50 White |

RECEIVED: Jun. 14, 2015

EP ENERGY

| | | | | | |
|---|---|---|---|---|---|
| **Company:** | EP Energy | **Job Number:** | | **Calculation Method** | Minimum Curvature |
| **Well:** | Karren Trust 4-30C4 | **Mag Decl.:** | | **Proposed Azimuth** | 0.00 |
| **Location:** | Duchesne, UT | **Dir Driller:** | | **Depth Reference** | KB |
| **Rig:** | Precision 406 | **MWD Eng:** | | **Tie Into:** | Gyro/MWD |

| Survey Number | Survey Depth (ft) | Inclination (deg) | Azimuth (deg) | Course Length (ft) | True Vertical Depth (ft) | Vertical Section (ft) | Coordinates N/S (ft) | | Coordinates E/W (ft) | | Closure Distance (ft) | Closure Direction Azimuth | Dogleg Severity (d/100') | Build Rate (d/100') | Walk Rate (d/100') |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Tie In** | **0.00** | **0.00** | **0.00** | | | | | | | | | | | | |
| 1 | 100.00 | 0.21 | 107.03 | 100.00 | 100.00 | -0.05 | 0.05 | S | 0.17 | E | 0.18 | 107.03 | 0.21 | 0.21 | 107.03 |
| 2 | 200.00 | 0.21 | 198.31 | 100.00 | 200.00 | -0.28 | 0.28 | S | 0.29 | E | 0.41 | 134.30 | 0.30 | 0.00 | 91.28 |
| 3 | 300.00 | 0.18 | 205.85 | 100.00 | 300.00 | -0.60 | 0.60 | S | 0.16 | E | 0.62 | 164.79 | 0.04 | -0.03 | 7.54 |
| 4 | 400.00 | 0.33 | 181.64 | 100.00 | 400.00 | -1.03 | 1.03 | S | 0.09 | E | 1.03 | 175.19 | 0.18 | 0.15 | -24.21 |
| 5 | 500.00 | 0.48 | 197.20 | 100.00 | 499.99 | -1.72 | 1.72 | S | 0.05 | W | 1.72 | 181.53 | 0.19 | 0.15 | 15.56 |
| 6 | 600.00 | 0.63 | 184.76 | 100.00 | 599.99 | -2.67 | 2.67 | S | 0.22 | W | 2.68 | 184.62 | 0.19 | 0.15 | -12.44 |
| 7 | 700.00 | 0.55 | 205.50 | 100.00 | 699.98 | -3.65 | 3.65 | S | 0.47 | W | 3.68 | 187.31 | 0.23 | -0.08 | 20.74 |
| 8 | 800.00 | 0.43 | 202.12 | 100.00 | 799.98 | -4.44 | 4.44 | S | 0.82 | W | 4.51 | 190.44 | 0.12 | -0.12 | -3.38 |
| 9 | 900.00 | 0.43 | 204.62 | 100.00 | 899.98 | -5.13 | 5.13 | S | 1.12 | W | 5.25 | 192.28 | 0.02 | 0.00 | 2.49 |
| 10 | 1000.00 | 0.41 | 174.71 | 100.00 | 999.98 | -5.83 | 5.83 | S | 1.24 | W | 5.96 | 192.02 | 0.22 | -0.02 | -29.91 |
| 11 | 1100.00 | 0.67 | 172.91 | 100.00 | 1099.97 | -6.77 | 6.77 | S | 1.14 | W | 6.86 | 189.54 | 0.26 | 0.26 | -1.81 |
| 12 | 1200.00 | 0.74 | 188.53 | 100.00 | 1199.96 | -7.99 | 7.99 | S | 1.16 | W | 8.07 | 188.27 | 0.21 | 0.08 | 15.62 |
| 13 | 1300.00 | 0.63 | 195.51 | 100.00 | 1299.96 | -9.16 | 9.16 | S | 1.40 | W | 9.26 | 188.72 | 0.14 | -0.12 | 6.98 |
| 14 | 1400.00 | 0.80 | 191.75 | 100.00 | 1399.95 | -10.37 | 10.37 | S | 1.69 | W | 10.51 | 189.27 | 0.18 | 0.17 | -3.76 |
| 15 | 1500.00 | 0.87 | 198.60 | 100.00 | 1499.94 | -11.78 | 11.78 | S | 2.08 | W | 11.96 | 190.01 | 0.12 | 0.07 | 6.85 |
| 16 | 1600.00 | 1.02 | 208.10 | 100.00 | 1599.92 | -13.28 | 13.28 | S | 2.74 | W | 13.56 | 191.65 | 0.21 | 0.14 | 9.49 |
| 17 | 1700.00 | 1.01 | 213.19 | 100.00 | 1699.91 | -14.79 | 14.79 | S | 3.64 | W | 15.23 | 193.81 | 0.09 | -0.01 | 5.10 |
| 18 | 1800.00 | 0.92 | 220.25 | 100.00 | 1799.89 | -16.14 | 16.14 | S | 4.64 | W | 16.79 | 196.02 | 0.15 | -0.09 | 7.06 |
| 19 | 1900.00 | 0.88 | 227.07 | 100.00 | 1899.88 | -17.28 | 17.28 | S | 5.72 | W | 18.20 | 198.31 | 0.11 | -0.04 | 6.82 |
| 20 | 2013.00 | 0.76 | 213.68 | 113.00 | 2012.87 | -18.49 | 18.49 | S | 6.77 | W | 19.69 | 200.10 | 0.20 | -0.11 | -11.85 |
| 21 | 2211.00 | 0.40 | 43.20 | 198.00 | 2210.87 | -19.08 | 19.08 | S | 7.02 | W | 20.33 | 200.20 | 0.58 | -0.18 | -86.10 |
| 22 | 2307.00 | 2.00 | 30.60 | 96.00 | 2306.84 | -17.39 | 17.39 | S | 5.94 | W | 18.38 | 198.85 | 1.68 | 1.67 | -13.13 |
| 23 | 2402.00 | 3.00 | 17.20 | 95.00 | 2401.75 | -13.59 | 13.59 | S | 4.36 | W | 14.27 | 197.79 | 1.21 | 1.05 | -14.11 |
| 24 | 2499.00 | 1.90 | 10.00 | 97.00 | 2498.66 | -9.58 | 9.58 | S | 3.33 | W | 10.15 | 199.16 | 1.18 | -1.13 | -7.42 |
| 25 | 2594.00 | 2.90 | 359.00 | 95.00 | 2593.58 | -5.63 | 5.63 | S | 3.10 | W | 6.43 | 208.83 | 1.15 | 1.05 | 367.37 |
| 26 | 2690.00 | 1.80 | 340.30 | 96.00 | 2689.50 | -1.78 | 1.78 | S | 3.65 | W | 4.06 | 243.98 | 1.38 | -1.15 | -19.48 |
| 27 | 2786.00 | 2.40 | 341.70 | 96.00 | 2785.43 | 1.55 | 1.55 | N | 4.79 | W | 5.03 | 287.89 | 0.63 | 0.63 | 1.46 |
| 28 | 2882.00 | 2.90 | 348.10 | 96.00 | 2881.33 | 5.83 | 5.83 | N | 5.92 | W | 8.31 | 314.56 | 0.60 | 0.52 | 6.67 |
| 29 | 2979.00 | 2.20 | 329.10 | 97.00 | 2978.23 | 9.83 | 9.83 | N | 7.38 | W | 12.29 | 323.09 | 1.12 | -0.72 | -19.59 |
| 30 | 3074.00 | 2.60 | 348.30 | 95.00 | 3073.15 | 13.50 | 13.50 | N | 8.76 | W | 16.09 | 327.04 | 0.94 | 0.42 | 20.21 |
| 31 | 3170.00 | 3.50 | 353.30 | 96.00 | 3169.01 | 18.55 | 18.55 | N | 9.54 | W | 20.86 | 332.78 | 0.98 | 0.94 | 5.21 |
| 32 | 3266.00 | 2.50 | 346.90 | 96.00 | 3264.88 | 23.50 | 23.50 | N | 10.36 | W | 25.68 | 336.21 | 1.10 | -1.04 | -6.67 |
| 33 | 3362.00 | 2.60 | 347.00 | 96.00 | 3360.79 | 27.66 | 27.66 | N | 11.32 | W | 29.88 | 337.74 | 0.10 | 0.10 | 0.10 |
| 34 | 3459.00 | 3.40 | 351.50 | 97.00 | 3457.65 | 32.65 | 32.65 | N | 12.24 | W | 34.87 | 339.45 | 0.86 | 0.82 | 4.64 |
| 35 | 3555.00 | 2.20 | 339.70 | 96.00 | 3553.54 | 37.19 | 37.19 | N | 13.30 | W | 39.50 | 340.32 | 1.38 | -1.25 | -12.29 |

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EP ENERGY

| | | | |
|---|---|---|---|
| **Company:** | EP Energy | **Job Number:** | |
| **Well:** | Karren Trust 4-30C4 | **Mag Decl.:** | |
| **Location:** | Duchesne, UT | **Dir Driller:** | |
| **Rig:** | Precision 406 | **MWD Eng:** | |

| | |
|---|---|
| **Calculation Method** | Minimum Curvature |
| **Proposed Azimuth** | 0.00 |
| **Depth Reference** | KB |
| **Tie Into:** | Gyro/MWD |

| Survey Number | Survey Depth (ft) | Inclination (deg) | Azimuth (deg) | Course Length (ft) | True Vertical Depth (ft) | Vertical Section (ft) | Coordinates N/S (ft) | | Coordinates E/W (ft) | | Closure Distance (ft) | Closure Direction Azimuth | Dogleg Severity (d/100') | Build Rate (d/100') | Walk Rate (d/100') |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | 3651.00 | 2.80 | 349.90 | 96.00 | 3649.45 | 41.23 | 41.23 | N | 14.35 | W | 43.65 | 340.81 | 0.78 | 0.63 | 10.63 |
| 37 | 3747.00 | 3.20 | 4.30 | 96.00 | 3745.32 | 46.21 | 46.21 | N | 14.56 | W | 48.45 | 342.51 | 0.89 | 0.42 | -360.00 |
| 38 | 3844.00 | 2.20 | 0.90 | 97.00 | 3842.21 | 50.77 | 50.77 | N | 14.33 | W | 52.75 | 344.24 | 1.04 | -1.03 | -3.51 |
| 39 | 3939.00 | 2.20 | 17.90 | 95.00 | 3937.14 | 54.33 | 54.33 | N | 13.74 | W | 56.04 | 345.81 | 0.68 | 0.00 | 17.89 |
| 40 | 4034.00 | 2.80 | 16.30 | 95.00 | 4032.05 | 58.29 | 58.29 | N | 12.53 | W | 59.62 | 347.87 | 0.64 | 0.63 | -1.68 |
| 41 | 4130.00 | 3.10 | 359.10 | 96.00 | 4127.92 | 63.13 | 63.13 | N | 11.91 | W | 64.25 | 349.32 | 0.97 | 0.31 | 357.08 |
| 42 | 4226.00 | 1.90 | 350.10 | 96.00 | 4223.83 | 67.30 | 67.30 | N | 12.23 | W | 68.40 | 349.70 | 1.31 | -1.25 | -9.38 |
| 43 | 4322.00 | 2.50 | 31.60 | 96.00 | 4319.76 | 70.65 | 70.65 | N | 11.40 | W | 71.56 | 350.83 | 1.73 | 0.63 | -331.77 |
| 44 | 4418.00 | 3.70 | 23.00 | 96.00 | 4415.62 | 75.28 | 75.28 | N | 9.09 | W | 75.83 | 353.11 | 1.34 | 1.25 | -8.96 |
| 45 | 4515.00 | 1.80 | 30.70 | 97.00 | 4512.51 | 79.48 | 79.48 | N | 7.09 | W | 79.79 | 354.90 | 1.99 | -1.96 | 7.94 |
| 46 | 4610.00 | 2.50 | 35.20 | 95.00 | 4607.44 | 82.45 | 82.45 | N | 5.14 | W | 82.61 | 356.43 | 0.76 | 0.74 | 4.74 |
| 47 | 4706.00 | 2.70 | 34.30 | 96.00 | 4703.34 | 86.03 | 86.03 | N | 2.66 | W | 86.07 | 358.23 | 0.21 | 0.21 | -0.94 |
| 48 | 4803.00 | 2.10 | 23.20 | 97.00 | 4800.25 | 89.55 | 89.55 | N | 0.67 | W | 89.55 | 359.57 | 0.78 | -0.62 | -11.44 |
| 49 | 4899.00 | 1.60 | 331.00 | 96.00 | 4896.21 | 92.34 | 92.34 | N | 0.63 | W | 92.34 | 359.61 | 1.76 | -0.52 | 320.63 |
| 50 | 4996.00 | 1.50 | 302.50 | 97.00 | 4993.18 | 94.21 | 94.21 | N | 2.35 | W | 94.24 | 358.57 | 0.79 | -0.10 | -29.38 |
| 51 | 5092.00 | 1.70 | 269.90 | 96.00 | 5089.14 | 94.88 | 94.88 | N | 4.84 | W | 95.00 | 357.08 | 0.96 | 0.21 | -33.96 |
| 52 | 5188.00 | 1.70 | 261.20 | 96.00 | 5185.10 | 94.66 | 94.66 | N | 7.67 | W | 94.97 | 355.37 | 0.27 | 0.00 | -9.06 |
| 53 | 5284.00 | 1.70 | 256.90 | 96.00 | 5281.06 | 94.12 | 94.12 | N | 10.46 | W | 94.70 | 353.66 | 0.13 | 0.00 | -4.48 |
| 54 | 5381.00 | 2.00 | 244.00 | 97.00 | 5378.01 | 93.05 | 93.05 | N | 13.38 | W | 94.01 | 351.81 | 0.53 | 0.31 | -13.30 |
| 55 | 5476.00 | 1.90 | 225.70 | 95.00 | 5472.95 | 91.22 | 91.22 | N | 16.00 | W | 92.62 | 350.05 | 0.66 | -0.11 | -19.26 |
| 56 | 5573.00 | 2.40 | 214.20 | 97.00 | 5569.88 | 88.42 | 88.42 | N | 18.29 | W | 90.29 | 348.31 | 0.68 | 0.52 | -11.86 |
| 57 | 5667.00 | 2.70 | 209.00 | 94.00 | 5663.79 | 84.86 | 84.86 | N | 20.47 | W | 87.29 | 346.44 | 0.40 | 0.32 | -5.53 |
| 58 | 5764.00 | 2.90 | 207.80 | 97.00 | 5760.68 | 80.69 | 80.69 | N | 22.73 | W | 83.83 | 344.27 | 0.21 | 0.21 | -1.24 |
| 59 | 5861.00 | 2.90 | 203.40 | 97.00 | 5857.55 | 76.27 | 76.27 | N | 24.84 | W | 80.21 | 341.96 | 0.23 | 0.00 | -4.54 |
| 60 | 5955.00 | 3.10 | 206.10 | 94.00 | 5951.42 | 71.80 | 71.80 | N | 26.91 | W | 76.68 | 339.46 | 0.26 | 0.21 | 2.87 |
| 61 | 6052.00 | 2.20 | 223.80 | 97.00 | 6048.32 | 68.10 | 68.10 | N | 29.35 | W | 74.16 | 336.69 | 1.24 | -0.93 | 18.25 |
| 62 | 6148.00 | 2.90 | 212.20 | 96.00 | 6144.22 | 64.72 | 64.72 | N | 31.92 | W | 72.16 | 333.75 | 0.90 | 0.73 | -12.08 |
| 63 | 6244.00 | 3.20 | 208.90 | 96.00 | 6240.09 | 60.32 | 60.32 | N | 34.51 | W | 69.49 | 330.22 | 0.36 | 0.31 | -3.44 |
| 64 | 6340.00 | 1.80 | 205.00 | 96.00 | 6335.99 | 56.60 | 56.60 | N | 36.44 | W | 67.32 | 327.23 | 1.47 | -1.46 | -4.06 |
| 65 | 6436.00 | 2.10 | 196.50 | 96.00 | 6431.94 | 53.55 | 53.55 | N | 37.58 | W | 65.42 | 324.94 | 0.43 | 0.31 | -8.85 |
| 66 | 6532.00 | 2.90 | 193.20 | 96.00 | 6527.85 | 49.50 | 49.50 | N | 38.63 | W | 62.79 | 322.03 | 0.85 | 0.83 | -3.44 |
| 67 | 6628.00 | 3.20 | 190.80 | 96.00 | 6623.71 | 44.50 | 44.50 | N | 39.69 | W | 59.63 | 318.27 | 0.34 | 0.31 | -2.50 |
| 68 | 6725.00 | 2.40 | 201.30 | 97.00 | 6720.59 | 39.95 | 39.95 | N | 40.93 | W | 57.20 | 314.30 | 0.98 | -0.82 | 10.82 |
| 69 | 6820.00 | 3.10 | 196.70 | 95.00 | 6815.48 | 35.64 | 35.64 | N | 42.39 | W | 55.38 | 310.05 | 0.77 | 0.74 | -4.84 |
| 70 | 6917.00 | 2.90 | 195.70 | 97.00 | 6912.35 | 30.76 | 30.76 | N | 43.81 | W | 53.53 | 305.08 | 0.21 | -0.21 | -1.03 |
| 71 | 7013.00 | 3.20 | 193.20 | 96.00 | 7008.22 | 25.82 | 25.82 | N | 45.08 | W | 51.95 | 299.80 | 0.34 | 0.31 | -2.60 |
| 72 | 7109.00 | 2.50 | 205.10 | 96.00 | 7104.10 | 21.31 | 21.31 | N | 46.58 | W | 51.22 | 294.59 | 0.95 | -0.73 | 12.40 |

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EP ENERGY

| | | | |
|---|---|---|---|
| **Company:** | EP Energy | **Job Number:** | |
| **Well:** | Karren Trust 4-30C4 | **Mag Decl.:** | |
| **Location:** | Duchesne, UT | **Dir Driller:** | |
| **Rig:** | Precision 406 | **MWD Eng:** | |

| | |
|---|---|
| **Calculation Method** | Minimum Curvature |
| **Proposed Azimuth** | 0.00 |
| **Depth Reference** | KB |
| **Tie Into:** | Gyro/MWD |

| Survey Number | Survey Depth (ft) | Inclination (deg) | Azimuth (deg) | Course Length (ft) | True Vertical Depth (ft) | Vertical Section (ft) | Coordinates N/S (ft) | | Coordinates E/W (ft) | | Closure Distance (ft) | Closure Direction Azimuth | Dogleg Severity (d/100') | Build Rate (d/100') | Walk Rate (d/100') |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 73 | 7205.00 | 3.20 | 197.00 | 96.00 | 7199.98 | 16.85 | 16.85 | N | 48.25 | W | 51.11 | 289.25 | 0.84 | 0.73 | -8.44 |
| 74 | 7301.00 | 2.10 | 168.80 | 96.00 | 7295.88 | 12.57 | 12.57 | N | 48.69 | W | 50.29 | 284.47 | 1.74 | -1.15 | -29.38 |
| 75 | 7397.00 | 2.90 | 175.30 | 96.00 | 7391.79 | 8.42 | 8.42 | N | 48.15 | W | 48.88 | 279.92 | 0.88 | 0.83 | 6.77 |
| 76 | 7493.00 | 2.40 | 162.30 | 96.00 | 7487.68 | 4.08 | 4.08 | N | 47.34 | W | 47.52 | 274.93 | 0.81 | -0.52 | -13.54 |
| 77 | 7589.00 | 3.30 | 168.30 | 96.00 | 7583.56 | -0.54 | 0.54 | S | 46.17 | W | 46.17 | 269.34 | 0.99 | 0.94 | 6.25 |
| 78 | 7686.00 | 2.70 | 171.80 | 97.00 | 7680.43 | -5.53 | 5.53 | S | 45.28 | W | 45.62 | 263.04 | 0.65 | -0.62 | 3.61 |
| 79 | 7782.00 | 3.30 | 172.40 | 96.00 | 7776.30 | -10.51 | 10.51 | S | 44.59 | W | 45.81 | 256.74 | 0.63 | 0.63 | 0.62 |
| 80 | 7878.00 | 2.70 | 151.60 | 96.00 | 7872.17 | -15.24 | 15.24 | S | 43.15 | W | 45.76 | 250.55 | 1.28 | -0.63 | -21.67 |
| 81 | 7974.00 | 3.30 | 167.20 | 96.00 | 7968.04 | -19.92 | 19.92 | S | 41.46 | W | 46.00 | 244.34 | 1.05 | 0.63 | 16.25 |
| 82 | 8070.00 | 1.70 | 180.90 | 96.00 | 8063.95 | -24.04 | 24.04 | S | 40.87 | W | 47.42 | 239.54 | 1.77 | -1.67 | 14.27 |
| 83 | 8166.00 | 0.70 | 116.50 | 96.00 | 8159.93 | -25.72 | 25.72 | S | 40.37 | W | 47.87 | 237.50 | 1.60 | -1.04 | -67.08 |
| 84 | 8262.00 | 2.60 | 171.60 | 96.00 | 8255.89 | -28.14 | 28.14 | S | 39.53 | W | 48.52 | 234.55 | 2.37 | 1.98 | 57.40 |
| 85 | 8358.00 | 1.60 | 154.70 | 96.00 | 8351.82 | -31.51 | 31.51 | S | 38.64 | W | 49.85 | 230.81 | 1.21 | -1.04 | -17.60 |
| 86 | 8400.00 | 1.36 | 148.02 | 42.00 | 8393.81 | -32.46 | 32.46 | S | 38.12 | W | 50.07 | 229.59 | 0.71 | -0.58 | -15.90 |
| 87 | 8500.00 | 1.16 | 154.83 | 100.00 | 8493.78 | -34.38 | 34.38 | S | 37.07 | W | 50.55 | 227.15 | 0.24 | -0.19 | 6.81 |
| 88 | 8600.00 | 1.28 | 161.14 | 100.00 | 8593.76 | -36.35 | 36.35 | S | 36.27 | W | 51.35 | 224.94 | 0.17 | 0.11 | 6.30 |
| 89 | 8700.00 | 1.35 | 176.55 | 100.00 | 8693.73 | -38.58 | 38.58 | S | 35.84 | W | 52.66 | 222.90 | 0.36 | 0.08 | 15.41 |
| 90 | 8800.00 | 1.51 | 178.32 | 100.00 | 8793.70 | -41.07 | 41.07 | S | 35.73 | W | 54.44 | 221.02 | 0.17 | 0.16 | 1.77 |
| 91 | 8900.00 | 1.83 | 193.65 | 100.00 | 8893.66 | -43.94 | 43.94 | S | 36.07 | W | 56.85 | 219.38 | 0.55 | 0.32 | 15.34 |
| 92 | 9000.00 | 2.35 | 188.35 | 100.00 | 8993.59 | -47.52 | 47.52 | S | 36.75 | W | 60.07 | 217.71 | 0.55 | 0.51 | -5.30 |
| 93 | 9100.00 | 2.69 | 184.67 | 100.00 | 9093.50 | -51.89 | 51.89 | S | 37.24 | W | 63.87 | 215.66 | 0.38 | 0.35 | -3.68 |
| 94 | 9200.00 | 2.65 | 185.66 | 100.00 | 9193.39 | -56.54 | 56.54 | S | 37.66 | W | 67.93 | 213.67 | 0.06 | -0.04 | 0.99 |
| 95 | 9300.00 | 2.92 | 190.29 | 100.00 | 9293.27 | -61.34 | 61.34 | S | 38.34 | W | 72.34 | 212.01 | 0.35 | 0.26 | 4.63 |
| 96 | 9400.00 | 2.63 | 192.17 | 100.00 | 9393.15 | -66.09 | 66.09 | S | 39.28 | W | 76.88 | 210.72 | 0.30 | -0.29 | 1.88 |
| 97 | 9500.00 | 2.85 | 193.24 | 100.00 | 9493.04 | -70.75 | 70.75 | S | 40.33 | W | 81.44 | 209.68 | 0.23 | 0.23 | 1.07 |
| 98 | 9600.00 | 2.59 | 193.04 | 100.00 | 9592.93 | -75.38 | 75.38 | S | 41.41 | W | 86.00 | 208.78 | 0.26 | -0.26 | -0.20 |
| 99 | 9700.00 | 2.75 | 190.75 | 100.00 | 9692.82 | -79.94 | 79.94 | S | 42.37 | W | 90.47 | 207.92 | 0.19 | 0.16 | -2.29 |
| 100 | 9800.00 | 2.57 | 187.59 | 100.00 | 9792.71 | -84.51 | 84.51 | S | 43.11 | W | 94.87 | 207.03 | 0.23 | -0.18 | -3.15 |
| 101 | 9900.00 | 2.59 | 187.71 | 100.00 | 9892.61 | -88.97 | 88.97 | S | 43.71 | W | 99.13 | 206.16 | 0.03 | 0.02 | 0.12 |
| 102 | 10000.00 | 2.75 | 186.59 | 100.00 | 9992.50 | -93.59 | 93.59 | S | 44.29 | W | 103.54 | 205.32 | 0.16 | 0.15 | -1.12 |
| 103 | 10100.00 | 2.75 | 182.94 | 100.00 | 10092.38 | -98.37 | 98.37 | S | 44.69 | W | 108.04 | 204.43 | 0.17 | 0.00 | -3.65 |
| 104 | 10200.00 | 2.62 | 184.07 | 100.00 | 10192.27 | -103.05 | 103.05 | S | 44.97 | W | 112.43 | 203.58 | 0.14 | -0.13 | 1.13 |
| 105 | 10300.00 | 2.42 | 180.00 | 100.00 | 10292.18 | -107.44 | 107.44 | S | 45.13 | W | 116.54 | 202.79 | 0.27 | -0.20 | -4.06 |
| 106 | 10400.00 | 2.77 | 185.69 | 100.00 | 10392.08 | -111.96 | 111.96 | S | 45.37 | W | 120.80 | 202.06 | 0.44 | 0.36 | 5.69 |
| 107 | 10500.00 | 2.86 | 182.95 | 100.00 | 10491.95 | -116.86 | 116.86 | S | 45.74 | W | 125.49 | 201.38 | 0.16 | 0.09 | -2.74 |
| 108 | 10600.00 | 2.54 | 185.08 | 100.00 | 10591.84 | -121.55 | 121.55 | S | 46.07 | W | 129.99 | 200.76 | 0.34 | -0.33 | 2.13 |
| 109 | 10700.00 | 2.63 | 182.08 | 100.00 | 10691.74 | -126.05 | 126.05 | S | 46.35 | W | 134.30 | 200.19 | 0.16 | 0.09 | -3.00 |

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| | | | | | |
|---|---|---|---|---|---|
| **Company:** | EP Energy | **Job Number:** | | **Calculation Method** | Minimum Curvature |
| **Well:** | Karren Trust 4-30C4 | **Mag Decl.:** | | **Proposed Azimuth** | 0.00 |
| **Location:** | Duchesne, UT | **Dir Driller:** | | **Depth Reference** | KB |
| **Rig:** | Precision 406 | **MWD Eng:** | | **Tie Into:** | Gyro/MWD |

| Survey Number | Survey Depth (ft) | Inclination (deg) | Azimuth (deg) | Course Length (ft) | True Vertical Depth (ft) | Vertical Section (ft) | Coordinates N/S (ft) | | Coordinates E/W (ft) | | Closure Distance (ft) | Closure Direction Azimuth | Dogleg Severity (d/100') | Build Rate (d/100') | Walk Rate (d/100') |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 110 | 10800.00 | 2.64 | 184.78 | 100.00 | 10791.64 | -130.63 | 130.63 | S | 46.62 | W | 138.70 | 199.64 | 0.13 | 0.02 | 2.71 |
| 111 | 10900.00 | 2.52 | 184.45 | 100.00 | 10891.53 | -135.12 | 135.12 | S | 46.98 | W | 143.06 | 199.17 | 0.12 | -0.12 | -0.33 |
| 112 | 10925.00 | 2.70 | 186.65 | 25.00 | 10916.51 | -136.26 | 136.26 | S | 47.09 | W | 144.17 | 199.07 | 0.81 | 0.70 | 8.78 |
| 113 | 11103.00 | 2.70 | 186.65 | 178.00 | 11094.31 | -144.58 | 144.58 | S | 48.06 | W | 152.36 | 198.39 | 0.00 | 0.00 | 0.00 |

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CENTRAL DIVISION

ALTAMONT FIELD
KARREN TRUST 4-30C4
KARREN TRUST 4-30C4
DRILLING LAND

# Operation Summary Report



RECEIVED: Jun. 14, 2015

# 1 General

## 1.1 Customer Information

| | |
|---|---|
| **Company** | CENTRAL DIVISION |
| **Representative** | |
| **Address** | |

## 1.2 Well Information

| | | | |
|---|---|---|---|
| **Well** | KARREN TRUST 4-30C4 | | |
| **Project** | ALTAMONT FIELD | **Site** | KARREN TRUST 4-30C4 |
| **Rig Name/No.** | PRECISION DRILLING/406 | **Event** | DRILLING LAND |
| **Start date** | 4/13/2015 | **End date** | |
| **Spud Date/Time** | 4/15/2015 | **UWI** | KARREN TRUST 4-30C4 |
| **Active datum** | KB @5,820.8ft (above Mean Sea Level) | | |
| **Afe No./Description** | 163172/53664 / KARREN TRUST 4-30C4 | | |

# 2 Summary

## 2.1 Operation Summary

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| 3/27/2015 | 6:00 | 8:00 | 2.00 | CASCOND | 24 | | P | 0.0 | SET 57' 20" CONDUCTOR, SET MOUSE HOLE @ 80'. ADDED RKB CORRECTION FOR PD 406. |
| | 8:00 | 11:30 | 3.50 | CASSURF | 24 | | P | 57.0 | DRILL 12¼" HOLE TO 2,137'. RAN 52 JTS 9-5/8" 40# N-80 LT&C TO 2,110'. FC @ 2,071' SHOE 2,110'. ADDED RKB CORRECTION FOR PD 406. |
| | 11:30 | 14:30 | 3.00 | CASSURF | 25 | | P | 2,137.0 | M&P PUMPED 20 BBLS H2O. 460 SXS ( 194 BBLS ) VARICEM LEAD CMT @ 12 PPG, 2.37 YLD TAILED WITH 200 SXS ( 46.3 BBLS ) OF HALCEM CMT @ 14.3 PPG, 1.30 YIELD. RELEASED TOP PLUG. DISPLACED WITH 156 BBLS OF H2O @ 4 BPM. BUMPED PLUG @ 14:25HRS 3/27/15 WITH 1,078 PSI. ¾ BBL BLED BACK, FLOATS HELD. GOOD RETURNS THROUGHOUT JOB. |
| | 14:30 | 6:00 | 15.50 | CASSURF | 25 | | P | 2,137.0 | WOC, NO FALL. RIG DOWN & CLEAR LOCATION. |
| 4/13/2015 | 6:00 | 6:00 | 24.00 | MIRU | 01 | | P | 2,137.0 | MOVE IN & RIG UP. 100% MOVED IN 65% RIGGED UP. RELEASED TRUCKS @ 20:00 HRS 4/12/15. |
| 4/14/2015 | 6:00 | 21:00 | 15.00 | MIRU | 01 | | P | 2,137.0 | PREP FLOOR & DERRICK. PU TDU. 100% RIGGED UP. RUN STEAM LINE. PERFORM RIG INSPECTION. RIG ON RATE @ 21:00 HRS 4/13/15. |
| | 21:00 | 4:00 | 7.00 | CASSURF | 28 | | P | 2,137.0 | NU 11" 10M BOPE & INSTALL FLOW LINE. PJSM. TORQUE BOLTS W/ WEATHERFORD. RU TEST UNIT. |
| | 4:00 | 6:00 | 2.00 | CASSURF | 19 | | P | 2,137.0 | TEST 11" 5M ANNULAR TO 250 / 2,500 PSI AND REMAINING BOPE, FLOOR VALVES, ETC TO 250 / 5,000 PSI. TESTED CHOKE MANIFOLD TO 250 / 10,000 PSI. HELD EACH TEST 10 MINUTES. |
| 4/15/2015 | 6:00 | 8:30 | 2.50 | CASSURF | 19 | | P | 2,137.0 | TESTED 11" 5M ANNULAR TO 250 / 2,500 PSI AND REMAINING BOPE, FLOOR VALVES, ETC TO 250 / 5,000 PSI. TESTED CHOKE MANIFOLD TO 250 / 10,000 PSI. HELD EACH TEST 10 MINUTES. MANUAL CHOKE VALVE FAILED. |
| | 8:30 | 9:30 | 1.00 | CASSURF | 31 | | P | 2,137.0 | TEST CASING TO 2,500 PSI FOR 30 MINUTES. TEST GOOD. |
| | 10:30 | 11:30 | 1.00 | CASSURF | 48 | | N | 2,137.0 | REMOVE CHOKE VALVE. |
| | 11:30 | 13:30 | 2.00 | CASSURF | 14 | | P | 2,137.0 | PU 8¾" BHA & RACK BACK. |
| | 13:30 | 14:30 | 1.00 | CASSURF | 48 | | N | 2,137.0 | INSTALL CHOKE VALVE. |
| | 14:30 | 17:00 | 2.50 | CASSURF | 19 | | P | 2,137.0 | TESTED HCR & MANUAL CHOKE TO 250 / 5,000 PSI. HELD EACH TEST 10 MINUTES. INSTALL WEAR BUSHING. |

## 2.1 Operation Summary (Continued)

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| | 17:00 | 20:30 | 3.50 | CASSURF | 14 | | P | 2,137.0 | MU BIT & TIH WITH BHA, PU 4.5" DP TO 2,013'. |
| | 20:30 | 21:30 | 1.00 | CASSURF | 17 | | P | 2,137.0 | S & C DRILL LINE. |
| | 21:30 | 22:30 | 1.00 | CASSURF | 12 | | P | 2,137.0 | SERVICED RIG & TDU. |
| | 22:30 | 23:30 | 1.00 | CASSURF | 43 | | N | 2,137.0 | CHANGE OUT HYDRAULIC RAM ON EXTEND BUSHING. |
| | 22:30 | 0:30 | 2.00 | CASSURF | 32 | | P | 2,137.0 | DRILL OUT CMT, FE & 10'. |
| | 0:30 | 1:00 | 0.50 | CASSURF | 33 | | P | 2,147.0 | CBU & PERFORM FIT TO 14.8 EMW WITH 9.7 PPG MUD @ 570 PSI. |
| | 1:00 | 6:00 | 5.00 | DRLINT1 | 07 | | P | 2,147.0 | DRILLED 2,147' - 2,645'. SPUD @ 1:00 4/15/15. |
| 4/16/2015 | 6:00 | 7:00 | 1.00 | DRLINT1 | 07 | | P | 2,645.0 | DRILLED 2,645' - 2,925'. |
| | 7:00 | 7:30 | 0.50 | DRLINT1 | 12 | | P | 2,925.0 | SERVICED RIG & TD. |
| | 7:30 | 13:30 | 6.00 | DRLINT1 | 07 | | P | 2,925.0 | DRILLED 2,925' - 3,606'. |
| | 13:30 | 14:00 | 0.50 | DRLINT1 | 57 | | N | 3,606.0 | TROUBLE SHOOT RYAN MWD TOOLS. |
| | 14:00 | 23:00 | 9.00 | DRLINT1 | 07 | | P | 3,606.0 | DRILLED 3,606' - 4,757'. |
| | 23:00 | 23:30 | 0.50 | DRLINT1 | 12 | | P | 4,757.0 | SERVICED RIG & TD. |
| | 23:30 | 6:00 | 6.50 | DRLINT1 | 07 | | P | 4,757.0 | DRILLED 4,757' - 5,750'. |
| 4/17/2015 | 6:00 | 14:30 | 8.50 | DRLINT1 | 07 | | P | 5,750.0 | DRILLED F/ 5,750' T/ 6,545'. |
| | 14:30 | 15:00 | 0.50 | DRLINT1 | 12 | | P | 6,545.0 | SERVICED RIG & TD. |
| | 15:00 | 3:00 | 12.00 | DRLINT1 | 07 | | P | 6,545.0 | DRILLED F/ 6,545' T/ 7,352'. |
| | 3:00 | 3:30 | 0.50 | DRLINT1 | 12 | | P | 7,352.0 | SERVICED RIG & TD. |
| | 3:30 | 6:00 | 2.50 | DRLINT1 | 07 | | P | 7,352.0 | DRILLED F/ 7,352' T/ 7,545'. |
| 4/18/2015 | 6:00 | 15:00 | 9.00 | DRLINT1 | 07 | | P | 7,545.0 | DRILLED F/ 7,545' T/ 7,929'. |
| | 15:00 | 15:30 | 0.50 | DRLINT1 | 12 | | P | 7,929.0 | SERVICED RIG & TD. |
| | 15:30 | 3:00 | 11.50 | DRLINT1 | 07 | | P | 7,929.0 | DRILLED F/ 7,929' T/ 8,453'. INT TD @ 03:00 4/18/15. 22' FT UNSEEN SLIDE IN THE HOLE. |
| | 3:00 | 4:30 | 1.50 | DRLINT1 | 15 | | P | 8,453.0 | SIMULATE CONNECTION. CIRC BU. MAX GAS 134 UNITS (3RD PARTY), 52 UNITS (PASON). CHECKED FLOW. |
| | 4:30 | 6:00 | 1.50 | DRLINT1 | 13 | | P | 8,453.0 | WIPER TRIP. |
| 4/19/2015 | 6:00 | 15:00 | 9.00 | DRLINT1 | 13 | | P | 8,453.0 | FINISH WIPER TRIP. FLOW CHECKS @ 2,100', 5,000', 8,453'. NO BACK REAMING ON TRIP. |
| | 15:00 | 16:30 | 1.50 | DRLINT1 | 15 | | P | 8,453.0 | C & C MUD. PASON BU GAS = 4118 UNITS, 3 RD PARTY BU GAS = 2503 UNITS. CHECKED FLOW (NEG), PUMPED SLUG. |
| | 16:30 | 0:00 | 7.50 | DRLINT1 | 14 | | P | 8,453.0 | L/D DP. CHECKED FLOW @ 6,000', 4,000', 2,000', 821'. |
| | 0:00 | 0:30 | 0.50 | DRLINT1 | 12 | | P | 8,453.0 | CLEANED RIG FLOOR OF 4 1/2" EQUIPMENT. |
| | 0:30 | 1:00 | 0.50 | DRLINT1 | 42 | | P | 8,453.0 | PULLED WEAR BUSHING, CHANGED OUT BAILS & ELEVATORS. REDUCED MW IN PITS F/ 9.9 PPG 45 VIS T/ 9.6 PPG 40 VIS. |
| | 1:00 | 2:00 | 1.00 | CASINT1 | 24 | | P | 8,453.0 | PJSM. RU FRANKS CASING CREW & TORQUE TURN. |
| | 2:00 | 6:00 | 4.00 | CASINT1 | 24 | | P | 8,453.0 | MU SHOE TRACK & TEST. RAN 47 JTS 7" 29# HCP-110 LT&C CSG TO 2,000'. BREAK CIRC EVERY 1,000'. CBU EVERY 2,000'. |
| 4/20/2015 | 6:00 | 17:30 | 11.50 | CASINT1 | 24 | | P | 8,453.0 | RAN 203 JTS 7" 20# HCP-110 LT&C CSG TO 8,453'. FLOAT COLLAR @ 8,410', MARKER JT @ 6,503'. CBU @ SHOE. BREAK CIRC EVERY 1,000' & CIRC BU 2,000'. NO LOSSES. PU TAG JT TAG BOTTOM @ 8,453'. LD TAG JT. SPACED OUT W/ 10' PUP JT & LANDING JT. |
| | 17:30 | 19:00 | 1.50 | CASINT1 | 15 | | P | 8,453.0 | C & C MUD @ 1 - 6 BPM . MAX GAS 2500 UNITS. NO FLARE. NO LOSSES. FINAL CIRC PRESSURE 460 PSI. HELD PJSM FOR CEMENT OPS. |

## 2.1 Operation Summary (Continued)

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| | 19:00 | 22:30 | 3.50 | CASINT1 | 25 | | P | 8,453.0 | RU HES CEMENTERS. PUMPED 47 BBLS 10.0 PPG TUNED SPACER . 670 SX ( 228.0 BBLS ) EXTENDACEM LEAD CMT @ 12.5 PPG, 1.91 YLD TAILED WITH 305 SXS ( 89 BBLS ) OF EXPANDACHEM CMT @ 13 PPG, 1.64 YIELD. RELEASED TOP PLUG. DISPLACED WITH 312 BBLS OF 9.7 PPG MUD @ 6 - 3 BPM. BUMPED PLUG @ 21:33 HRS 4/19/15 WITH 2200 PSI. 2.5 BBL BLED BACK, FLOATS HELD. RD CEMENTERS. RETURNS SLOWED LAST 90 BBLS DISP, TOTAL LOST 60 BBLS DURRING CMT OPS. 20 BBLS SPACER CAME BACK TO SURFACE. EST TOC 1,800'. |
| | 22:30 | 23:30 | 1.00 | CASINT1 | 27 | | P | 8,453.0 | LD LANDING JT. INSTALLED & TEST PACK-OFF TO 5,000 PSI FOR 15 MIN. |
| | 23:30 | 0:30 | 1.00 | CASINT1 | 31 | | P | 8,453.0 | TESTED CASING TO 2,500 PSI HOLD FOR FOR 30 MINUTES. |
| | 0:30 | 2:30 | 2.00 | CASINT1 | 42 | | P | 8,453.0 | CHANGED OUT IBOP, TDU SAVER SUB TO 4" XT-39, BAILS, & 4" ELEVATORS. |
| | 2:30 | 6:00 | 3.50 | CASINT1 | 19 | | P | 8,453.0 | PJSM. RU WEATHERFORD TESTERS & TESTED 11" 5M ANNULAR TO 250 / 4,000 PSI, RAMS & REMAINING BOPE, FLOOR VALVES, ETC TO 250 / 10,000 PSI. HOLD EACH TEST 10 MINUTES. |
| 4/21/2015 | 6:00 | 8:30 | 2.50 | CASINT1 | 19 | | P | 8,453.0 | PJSM. RU WEATHERFORD TESTERS & TESTED 11" 5M ANNULAR TO 250 / 4,000 PSI, RAMS & REMAINING BOPE, FLOOR VALVES, ETC TO 250 / 10,000 PSI. HOLD EACH TEST 10 MINUTES. |
| | 8:30 | 9:30 | 1.00 | CASINT1 | 12 | | P | 8,453.0 | SERVICE RIG & TD. CLEANED FLOOR & PREPARED TO PU BHA & 4" DP. |
| | 9:30 | 19:00 | 9.50 | CASINT1 | 14 | | P | 8,453.0 | PU BHA & 4" XT 39 DP. TIH T/ 8,300'. |
| | 19:00 | 20:30 | 1.50 | CASINT1 | 42 | | P | 8,453.0 | S & C DRILL LINE |
| | 20:30 | 21:00 | 0.50 | CASINT1 | 31 | | P | 8,453.0 | PRE FIT CASING TEST (1930 PSI). |
| | 21:00 | 22:30 | 1.50 | CASINT1 | 32 | | P | 8,453.0 | DRILL FE & CMT. |
| | 22:30 | 23:00 | 0.50 | DRLPRD | 07 | | P | 8,453.0 | DRILLED F/ 8,453' T/ 8,463'. |
| | 23:00 | 23:30 | 0.50 | DRLPRD | 15 | | P | 8,463.0 | CIRC BU. |
| | 23:30 | 0:00 | 0.50 | DRLPRD | 33 | | P | 8,463.0 | PREFORMED FIT. 14.8 PPG EMW. PUMPED INTO FORMATION @ 1680 PSI W/ 11.0 PPG MW. |
| | 0:00 | 4:00 | 4.00 | DRLPRD | 07 | | P | 8,463.0 | DRILLED F/ 8,463' T/ 8,900'. |
| | 4:00 | 4:30 | 0.50 | DRLPRD | 15 | | P | 8,900.0 | CIRC BU F/ WIRELINE SURVEY. |
| | 4:30 | 5:30 | 1.00 | DRLPRD | 11 | | P | 8,900.0 | RUN WIRELINE SURVEY @ 8869'. |
| | 5:30 | 6:00 | 0.50 | DRLPRD | 07 | | P | 8,900.0 | DRILLED F/ 8,900' T/ 8,995'. |
| 4/22/2015 | 6:00 | 14:00 | 8.00 | DRLPRD | 07 | | P | 8,995.0 | DRILLED F/ 8,995' T/ 9,751'. |
| | 14:00 | 14:30 | 0.50 | DRLPRD | 12 | | P | 9,751.0 | SERVICED RIG & TD. |
| | 14:30 | 20:00 | 5.50 | DRLPRD | 07 | | P | 9,751.0 | DRILLED F/ 9,721' T/ 10,324'. |
| | 20:00 | 20:30 | 0.50 | DRLPRD | 12 | | P | 10,324.0 | SERVICED RIG & TD. |
| | 20:30 | 6:00 | 9.50 | DRLPRD | 07 | | P | 10,324.0 | DRILLED F/ 10,324' T/ 11,103'. TD @ 06:00 HRS 4-22-15. |
| 4/23/2015 | 6:00 | 7:00 | 1.00 | DRLPRD | 15 | | P | 11,103.0 | C & C MUD. RMW F/ 11.9 PPG T/ 12.1 PPG. FLOW CK (NEG). |
| | 7:00 | 11:00 | 4.00 | DRLPRD | 13 | | P | 11,103.0 | WIPER TRIP TO 8,450'. |
| | 11:00 | 14:30 | 3.50 | DRLPRD | 15 | | P | 11,103.0 | C & C MUD. MAX GAS 6944 UNITS (PASON), 2429 UNITS (MUD LOGGER) , MUD CUT 11.4 PPG F/ 12.1 PPG.. RAISE MW F/ 12.1 PPG T 12.3 PPG. VIS 45 FLOW CK. |
| | 14:30 | 20:30 | 6.00 | DRLPRD | 13 | | P | 11,103.0 | TOH TO LOG & RUN 5" LINER. FLOW CK @ 11,103, 8500, 6000 3500, LD BIT STAB'S & PONY COLLAR |
| | 20:30 | 21:00 | 0.50 | DRLPRD | 13 | | P | 11,103.0 | CLEANED RIG FLOOR & CAT WALK. |
| | 21:00 | 3:00 | 6.00 | EVLPRD | 22 | | P | 11,103.0 | PJSM. RU & RUN HALLIBURTONS ULTRA SLIM COMBO. LOGGER'S DEPTH 11,100' LOG UP TO 2000'. RD HES LOGGING UNIT. REDUCED MW F/ 12.3 PPG T/ 11.9 PPG 40 VIS WHILE LOGGING. |
| | 3:00 | 4:00 | 1.00 | CASPRD1 | 24 | | P | 11,103.0 | PJSM. RU FRANKS CSG CREW & TORQUE TURN. |

## 2.1 Operation Summary (Continued)

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| | 4:00 | 6:00 | 2.00 | CASPRD1 | 24 | | P | 11,103.0 | MADE UP 5" 18# HCP110 STL SHOE TRACK. TESTED SHOE TRACK. PU 5" 18# HCP110 STL. 886' AT REPORT TIME. VAM REP (CLIFF) SUPERVISING LINER OPERATIONS. |
| 4/24/2015 | 6:00 | 22:30 | 16.50 | CASPRD1 | 13 | | P | 11,103.0 | FINISH PU 5" LINER. TOTAL LINER 2,790'. TIH W/ 5" LINER ON 4" DP @ 70 FPM. FILL EVERY 1,000'. & CIRC BU EVERY 2,000'.. TAG BOTTOM W/ 10 K. SPACE OUT & RU CEMENT HEAD. |
| | 22:30 | 1:30 | 3.00 | CASPRD1 | 15 | | P | 11,103.0 | CIRC 2X BU. INITIAL RATE 1.1 BPM, INCREASED TO 2.5 BPM, PRESSURE LEVELED OFF AFTER 1 BU. MAX GAS 8114 UNITS PASON. 10.7 PPG MC. BG GAS 376 UNITS. FINAL CIRC PRESSURE 421 PSI @ 2.5 BPM. NO LOSSES DURING CIRCULATION. HELD PJSM ON CEMENT OPERATIONS. |
| | 1:30 | 3:30 | 2.00 | CASPRD1 | 25 | | P | 11,103.0 | RU HES & TESTED LINES TO 9,500 PSI. PUMPED 20 BBLS 12.2 PPG TUNED SPACER & 215 SKS ( 66 BBLS) 14.2 PPG WITH 1.52 YIELD EXPANDACEM CMT. WASHED LINES. DROPPED DP DART. PUMPED 60 BBLS H2O WITH 2% KCL 0.1 % BIOCIDE, 74 BBLS 11.9 PPG MUD. BUMPED PLUG WITH 2800 PSI @ 04:00 HRS 4/24/15. CHECKED FLOATS, FLOATS HELD, 1.25 BBLS BLED BACK. NO LOSSES DURING CMT OPS. EST TOC 8,313'. |
| | 3:30 | 4:30 | 1.00 | CASPRD1 | 25 | | P | 11,103.0 | RELEASED BALL, RUPTURE DISC @ 5200 PSI. PUMPED 45 BBLS, PRESSURED TO 7900 PSI, EXPANDED HANGER. PULL TESTED LINER WITH 80K OVERPULL. SAT DOWN 90K , RELEASED SETTING TOOL FROM LINER HANGER. LANDED FS @ 11,098, FC @11,047 ', LC @ 10,998'. TOL @ 8307'. 146' OF LAP. TOTAL LINER 2790'. MARKER JT TOPS @ 10,079' & 9,085'. |
| | 4:30 | 5:30 | 1.00 | CASPRD1 | 15 | | P | 11,103.0 | PULLED UP TO TOL. OBSERVED 2 OVERPULLS OF 10K THROUGH SEALS. CIRC 1.5 TIMES ANNULAR VOLUME. 20 BBLS WEIGHTED SPACER & 20 BBLS WEIGHTED CEMENT TO SURFACE. CHECKED FLOW (NEG). POSITIVE TEST TOL TO 1,000 PSI FOR 10MIN. TEST OK. |
| | 5:30 | 6:00 | 0.50 | CASPRD1 | 15 | | P | 11,103.0 | DISPLACING MUD OUT OF THE HOLE WITH WATER. |
| 4/25/2015 | 6:00 | 8:00 | 2.00 | CASPRD1 | 15 | | P | 11,103.0 | PUMPED 350 BBLS H2O WITH NO ADDITIVES, 250 BBLS H2O WITH 2% KCL 0.1 % BIOCIDE TILL CLEAN RETURNS. RD HES. |
| | 8:00 | 19:30 | 11.50 | CASPRD1 | 14 | | P | 11,103.0 | LD DP & LAY DOWN LINER SITTING TOOL. RUN DC'S & DP OUT OF DERRICK . LD DP & DC'S. CLEANED MUD TANKS. |
| | 19:30 | 22:30 | 3.00 | CASPRD1 | 29 | | P | 11,103.0 | PJSM. ND BOPE. |
| | 22:30 | 0:30 | 2.00 | CASPRD1 | 30 | | P | 11,103.0 | INSTALLED TBG HEAD & FRAC VALVE. TESTED HEAD TO 5,000 PSI FOR 10MIN. RIG RELEASED @ 00:30 HRS 4-25-15. |
| | 0:30 | 6:00 | 5.50 | RDMO | 02 | | P | 11,103.0 | PREPARED RIG TO BE MOVED TO THE MILLETT 2-14C5 |
| 4/26/2015 | 6:00 | 6:00 | 24.00 | RDMO | 02 | | P | 11,103.0 | PREPARED PD 406 TO BE MOVED TO THE MILLETT 2-14C5. |

## Table of Contents

CENTRAL DIVISION

ALTAMONT FIELD
KARREN TRUST 4-30C4
KARREN TRUST 4-30C4
COMPLETION LAND

# Operation Summary Report



RECEIVED: Jun. 14, 2015

# 1 General

## 1.1 Customer Information

| | |
|---|---|
| **Company** | CENTRAL DIVISION |
| **Representative** | |
| **Address** | |

## 1.2 Well Information

| | | | |
|---|---|---|---|
| **Well** | KARREN TRUST 4-30C4 | | |
| **Project** | ALTAMONT FIELD | **Site** | KARREN TRUST 4-30C4 |
| **Rig Name/No.** | | **Event** | COMPLETION LAND |
| **Start date** | 5/1/2015 | **End date** | |
| **Spud Date/Time** | 4/15/2015 | **UWI** | KARREN TRUST 4-30C4 |
| **Active datum** | KB @5,820.8ft (above Mean Sea Level) | | |
| **Afe No./Description** | 163172/53664 / KARREN TRUST 4-30C4 | | |

# 2 Summary

## 2.1 Operation Summary

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| 5/1/2015 | 11:00 | 13:30 | 2.50 | MIRU | 01 | | P | | MOVE RIG TO LOCATION. SPOT CATWALK & PIPE RACKS. UNLOAD TBG. NU BOP. RU RIG. |
| | 13:30 | 18:30 | 5.00 | WOR | 24 | | P | | TIH W/ 4-1/8* OD BIT, BIT SUB, 90 JTS 2-3/8"EUE TBG, X-OVER & 165 JTS 2-7/8"EUE TBG. SDFN |
| 5/2/2015 | 6:00 | 7:00 | 1.00 | WOR | 28 | | P | | CREW TRAVEL TO LOCATION HSM WRITE AND REVIEW JSA TOPIC; R/U POWER SWIVEL HAND PLACEMENT |
| | 7:00 | 10:30 | 3.50 | WOR | 39 | | P | | CONTINUE TIH TAG AT 10931' TMD R/U POWER SWIVEL ESTABLISH CIRC C/O TO 11003' TMD CIRC WELL CLEAN R/D POWER SWIVLE |
| | 10:30 | 15:40 | 5.17 | WOR | 39 | | P | | TOH L/D 250 JTS OF 2 7/8" TBG CHANGE HANDLING TOOLS 90-JTS OF 2 3/8" L/D BIT AND BIT SUB SECURE WELL CLOSE 7" MASTER VALVE |
| | 15:40 | 15:40 | 0.00 | WOR | 16 | | P | | R/D FLOOR N/D BOPE N/U NIGHT CAP AND 7" MASTER VLAVE RDMO |
| 5/5/2015 | 6:00 | 7:00 | 1.00 | WLWORK | 28 | | P | | CREW TRAVEL HSM WRITE & REVIEW JSA (TOPIC) TRIP HAZARDS |
| | 7:00 | 13:00 | 6.00 | WLWORK | 18 | | P | | R/U WIRELINE TRUCK & HOT OIL TRUCK, FILL CSG W/ 25 BBLS 2% KCL, RIH W/ CBL TOOL TO 11,100', PRESSURE UP TO 4000 PSI, POOH RUNNING CBL TO 100', BLEED OFF PRESSURE, R/D WIRELINE TRUCK & HOTOILER, SECURE WELL, SDFD |
| 5/8/2015 | 6:00 | 7:30 | 1.50 | WHDTRE | 28 | | P | | CREW TRAVEL HELD SAFETY MEETING ON NIPPLING UP FRAC VALVES. FILLED OUT JSA. |
| | 7:30 | 12:30 | 5.00 | WHDTRE | 16 | | P | | PRESSURE TEST CSG@ 9000 PSI FOR 30 MINS. HELD. NU FRAC VALVES AND PRESSURE TEST @ 10000 PSI HELD. |
| 5/9/2015 | 6:00 | 7:30 | 1.50 | WLWORK | 28 | | P | | CREW TRAVEL HELD SAFETY MEETING ON RIGGING UP WIRELINE (OVERHEAD HAZARDS). FILLED OUT JSA. |
| | 7:30 | 11:00 | 3.50 | WLWORK | 21 | | P | | MIRU WIRELINE PERFORATED STAGE #1 FROM 10946' TO 10601'. ALL PERFS CORRELATED TO CUTTERS RADIAL CBL, GAMMA RAY, CCL LOG RUN #1 DATED 04-MAY-2015. 23 NET FT. 69 SHOTS. 2 3/4" GUNS, 16 GM CHARGES, 3 SPF, 120 PHASING. STARTING PRESSURE 1000 PSI. FINAL PRESSURE 900 PSI. RD WIRELINE. CLOSED IN WELL CLOSED AND LOCKED FRAC VALVES CLOSED CSG VALVES AND INSTALL NIGHT CAPS. |

## 2.1 Operation Summary (Continued)

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| 5/10/2015 | 6:00 | 7:30 | 1.50 | SITEPRE | 28 | | P | | CREW TRAVEL HELD SAFETY MEETING ON TRANSFERRING WATER. FILLED OUT JSA. |
| | 7:30 | 13:30 | 6.00 | SITEPRE | 18 | | P | | TRANSFERED WATER THRU CHOLRINE DIOXIDE UNIT. AND STARTED HEATING WATER. |
| | 13:30 | 18:00 | 4.50 | SITEPRE | 18 | | P | | FINISHED HEATING WATER AND REFILL STAGING AREA. |
| 5/11/2015 | 6:00 | 6:30 | 0.50 | SITEPRE | 28 | | P | | CREW TRAVEL HELD SAFETY MEETING ON HEATING WATER. FILLED OUT JSA. |
| | 6:30 | 18:00 | 11.50 | SITEPRE | 18 | | P | | FINISHED HEATING FRAC TANKS AND MIRU FRAC EQUIPMENT. |
| 5/12/2015 | 6:00 | 7:00 | 1.00 | MIRU | 28 | | P | | HELD SAFETY MEETING ON PUMPING HIGH PRESSURE. FILLED OUT JSA AND STARTED EQUIPMENT. |
| | 7:00 | 9:00 | 2.00 | STG01 | 35 | | P | | PRESSURE TEST LINES @ 9650 PSI. OPENED UP WELL W/ 274 PSI. BREAK DOWN STAGE # 1 PERFS @ 4431 PSI, 9.8 BPM, 8 BBLS PUMPED. EST INJ RATE 35 BPM, 5100 PSI. STEP RATE TEST 26 OPEN PERFS. I.S.I.P. 3963 PSI. F.G. ..80, 5 MIN 3803 PSI, 10 MIN 3757 PSI. TREATED PERFS W/ 5000 GALS 15% HCL ACID. PUMPED 3100 LBS 100 MESH IN 1/2 PPG STAGE AND 150400 LBS TLC 30/50. IN .5#, 1#, 2# AND 3# STAGES. AVG RATE 65.6 BPM, MAX RATE 75.9 BPM. AVG PRESS 4951, MAX PRESS 7251. I.S.I.P. 4263 PSI. F.G. ..83. SHUT WELL IN 3928 BBLS TO RECOVER. TURNED WELL OVER TO WIRELINE |
| | 9:00 | 14:00 | 5.00 | STG02 | 26 | | N | | RU WIRELINE RIH SET CBP @ 10550', UNABLE TO RELEASE FROM CBP.PERFORATE CSG FROM 10438.5' TO 10440.5'. WORKED PERF GUN FREE. PULLED UP TO 10059 GOT STUCK, WORKRED GUN FREE. POOH W/ GUN AND SETTING TOOL HAD SAND IN SETTING TOOL AND PERF GUNS.RIH W/ OLD PERF GUN. TAGGED @ 10548' WAS STICKY. POOH. |
| | 14:00 | 16:00 | 2.00 | STG02 | 21 | | P | | RIH SET CBP @ 10428' W/ 4200 PSI. PERFORATED STAGE # 2 FROM 10519" TO 10209'. ALL PERFS CORRELATED TO CUTTERS RADIAL CBL, GAMMA RAY, CCL LOG RUN #1 DATED 04-MAY-2015. 23 NET FT. 69 SHOTS. 2 3/4" GUNS, 16 GM CHARGES, 3 SPF, 120 PHASING. STARTING PRESSURE 4200 PSI. FINAL PRESSURE 3500 PSI. TURNED WELL OVER TO FRAC CREW. |
| | 16:00 | 17:30 | 1.50 | STG02 | 35 | | P | | PRESSURE TEST LINES @ 9350 PSI. OPENED UP WELL W/ 3197 PSI. BREAK DOWN STAGE # 2 PERFS @ 4528 PSI, 10 BPM, 12 BBLS PUMPED. EST INJ RATE 34.8 BPM, 5169 PSI. STEP RATE TEST 14 OPEN PERFS. I.S.I.P. 3755 PSI. F.G. ..795, 5 MIN 3517 PSI, 10 MIN 3483 PSI. TREATED PERFS W/ 5000 GALS 15% HCL ACID. PUMPED 3100 LBS 100 MESH IN 1/2 PPG STAGE AND 150400 LBS TLC 30/50. IN .5#, 1#, 2# AND 3# STAGES. AVG RATE 66.8 BPM, MAX RATE 75.6 BPM. AVG PRESS 4897, MAX PRESS 7200. I.S.I.P. 3466 PSI. F.G. .767. SHUT WELL IN 3883 BBLS TO RECOVER. TURNED WELL OVER TO WIRELINE |
| | 17:30 | 20:00 | 2.50 | STG03 | 21 | | P | | RIH W/ WIRELINE CBP WAS FLOATING IN GEL, PULLED ABOVE LINER TOP WAIT 1 HR. RIH SET CBP @ 10195' W/ 4000 PSI. PERFORATED STAGE # 3 FROM 10180' TO 9870'. ALL PERFS CORRELATED TO CUTTERS RADIAL CBL, GAMMA RAY, CCL LOG RUN #1 DATED 04-MAY-2015. 23 NET FT. 69 SHOTS. 2 3/4" GUNS, 16 GM CHARGES, 3 SPF, 120 PHASING. STARTING PRESSURE 4000 PSI. FINAL PRESSURE 3900 PSI. SHUT IN WELL. CLOSED AND LOCKED ALL FRAC VALVES. CLOSED IN SURFACE CSG W/ TWO VALVES. |
| 5/13/2015 | 6:00 | 6:30 | 0.50 | STG03 | 28 | | P | | HELD SAFETY MEETING ON PUMPING HIGH PRESSURE. BODY POSITIONING. FILLED OUT JSA |

## 2.1 Operation Summary (Continued)

| Date | Time Start-End | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 6:30 8:00 | 1.50 | STG03 | 35 | | P | | PRESSURE TEST LINES @ 9416 PSI. OPENED UP WELL W/ 3860 PSI. BREAK DOWN STAGE # 3 PERFS @ 4897 PSI, 9.9 BPM, 5 BBLS PUMPED. EST INJ RATE 36.1 BPM, 4885 PSI. STEP RATE TEST 20 OPEN PERFS. I.S.I.P. 4139 PSI. F.G. ..85, 5 MIN 3977 PSI, 10 MIN 3906 PSI. TREATED PERFS W/ 5000 GALS 15% HCL ACID. PUMPED 3000 LBS 100 MESH IN 1/2 PPG STAGE AND 150500 LBS TLC 30/50. IN .5#, 1#, 2# AND 3# STAGES. AVG RATE 74.1 BPM, MAX RATE 75.9 BPM. AVG PRESS 5156, MAX PRESS 7024. I.S.I.P. 3572 PSI. F.G. ..789. SHUT WELL IN 3881 BBLS TO RECOVER. TURNED WELL OVER TO WIRELINE |
| | 8:00 10:00 | 2.00 | STG04 | 21 | | P | | RIH W/ WIRELINE CBP WAS FLOATING IN GEL, PULLED ABOVE LINER TOP WAIT 40 MINS. RIH SET CBP @ 9854' W/ 4000 PSI. PERFORATED STAGE # 4 FROM 9839' TO 9605'. ALL PERFS CORRELATED TO CUTTERS RADIAL CBL, GAMMA RAY, CCL LOG RUN #1 DATED 04-MAY-2015. 23 NET FT. 69 SHOTS. 2 3/4" GUNS, 16 GM CHARGES, 3 SPF, 120 PHASING. STARTING PRESSURE 4000 PSI. FINAL PRESSURE 4000 PSI. TURNED WELL OVER TO FRAC CREW |
| | 10:00 11:30 | 1.50 | STG04 | 35 | | P | | PRESSURE TEST LINES @ 9514 PSI. OPENED UP WELL W/ 3935 PSI. BREAK DOWN STAGE # 4 PERFS @ 5417 PSI, 9.8 BPM, 9 BBLS PUMPED. EST INJ RATE 32.5 BPM, 4720 PSI. STEP RATE TEST 20 OPEN PERFS. I.S.I.P. 4020 PSI. F.G. ..85, 5 MIN 3971 PSI, 10 MIN 3944 PSI. TREATED PERFS W/ 5000 GALS 15% HCL ACID. PUMPED 3000 LBS 100 MESH IN 1/2 PPG STAGE AND 150600 LBS TLC 30/50. IN .5#, 1#, 2# AND 3# STAGES. AVG RATE 73.3 BPM, MAX RATE 75.5 BPM. AVG PRESS 4896, MAX PRESS 6393. I.S.I.P. 4110 PSI. F.G. ..856. SHUT WELL IN 3887 BBLS TO RECOVER. TURNED WELL OVER TO WIRELINE |
| | 11:30 12:45 | 1.25 | STG05 | 21 | | P | | RIH SET CBP @ 9588' W/ 4100 PSI. PERFORATED STAGE # 5 FROM 9573' TO 9327'. ALL PERFS CORRELATED TO CUTTERS RADIAL CBL, GAMMA RAY, CCL LOG RUN #1 DATED 04-MAY-2015. 21 NET FT. 63 SHOTS. 2 3/4" GUNS, 16 GM CHARGES, 3 SPF, 120 PHASING. STARTING PRESSURE 4100 PSI. FINAL PRESSURE 3800 PSI. TURNED WELL OVER TO FRAC CREW |
| | 12:45 14:15 | 1.50 | STG05 | 35 | | P | | PRESSURE TEST LINES @ 9557 PSI. OPENED UP WELL W/ 3750 PSI. BREAK DOWN STAGE # 5 PERFS @ 4112 PSI, 9.7 BPM, 9 BBLS PUMPED. EST INJ RATE 34.5 BPM, 4400 PSI. STEP RATE TEST 23 OPEN PERFS. I.S.I.P. 3663 PSI. F.G. ..82, 5 MIN 3554 PSI, 10 MIN 3519 PSI. TREATED PERFS W/ 5000 GALS 15% HCL ACID. PUMPED 3000 LBS 100 MESH IN 1/2 PPG STAGE AND 150700 LBS TLC 30/50. IN .5#, 1#, 2# AND 3# STAGES. AVG RATE 73.6 BPM, MAX RATE 75.5 BPM. AVG PRESS 4886, MAX PRESS 6016. I.S.I.P. 3507 PSI. F.G. .804. SHUT WELL IN 3915 BBLS TO RECOVER. TURNED WELL OVER TO WIRELINE |
| | 14:15 15:30 | 1.25 | STG06 | 21 | | P | | RIH SET CBP @ 9312' W/ 4000 PSI. PERFORATED STAGE # 6 FROM 9297' TO 9073'. ALL PERFS CORRELATED TO CUTTERS RADIAL CBL, GAMMA RAY, CCL LOG RUN #1 DATED 04-MAY-2015. 22 NET FT. 66 SHOTS. 2 3/4" GUNS, 16 GM CHARGES, 3 SPF, 120 PHASING. STARTING PRESSURE 4000 PSI. FINAL PRESSURE 3200 PSI. TURNED WELL OVER TO FRAC CREW |

## 2.1 Operation Summary (Continued)

| Date | Time Start-End | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 15:30 16:45 | 1.25 | STG06 | 35 | | P | | PRESSURE TEST LINES @ 9550 PSI. OPENED UP WELL W/ 3414 PSI. BREAK DOWN STAGE # 6 PERFS @ 5916 PSI, 19.7 BPM, 20 BBLS PUMPED. EST INJ RATE 35 BPM, 4834 PSI. STEP RATE TEST 16 OPEN PERFS. I.S.I.P. 3652 PSI. F.G. .83, 5 MIN 3053 PSI, 10 MIN 2930 PSI. TREATED PERFS W/ 5000 GALS 15% HCL ACID. PUMPED 3000 LBS 100 MESH IN 1/2 PPG STAGE AND 150620 LBS TLC 30/50. IN .5#, 1#, 2# AND 3# STAGES. AVG RATE 74.4 BPM, MAX RATE 76 BPM. AVG PRESS 4964, MAX PRESS 6412. I.S.I.P. 3401 PSI. F.G. .803. SHUT WELL IN 3876 BBLS TO RECOVER. TURNED WELL OVER TO WIRELINE |
| | 16:45 19:30 | 2.75 | STG07 | 21 | | P | | RIH W/ WIRELINE CBP WAS FLOATING IN GEL, PULLED ABOVE LINER TOP WAIT 40 MINS. RIH SET CBP @ 9054' W/ 2700 PSI. PERFORATED STAGE # 7 FROM 9039' TO 8783'. ALL PERFS CORRELATED TO CUTTERS RADIAL CBL, GAMMA RAY, CCL LOG RUN #1 DATED 04-MAY-2015. 23 NET FT. 69 SHOTS. 2 3/4" GUNS, 16 GM CHARGES, 3 SPF, 120 PHASING. STARTING PRESSURE 2700 PSI. FINAL PRESSURE 2500 PSI. SHUT IN WELL. CLOSED AND LOCKED ALL FRAC VALVES. CLOSED IN SURFACE CSG W/ TWO VALVES. |
| 5/14/2015 | 6:00 7:30 | 1.50 | STG07 | 28 | | P | | CREW TRAVEL HELD SAFETY MEETING ON PUMPING HIGH PRESSURE AND TESTING LINES. FILLED OUT JSA |
| | 7:30 9:15 | 1.75 | STG07 | 35 | | P | | PRESSURE TEST LINES @ 9569 PSI. OPENED UP WELL W/ 1815 PSI. BREAK DOWN STAGE # 7 PERFS @ 3369 PSI, 9.9 BPM, 16 BBLS PUMPED. EST INJ RATE 35.1 BPM, 3950 PSI. STEP RATE TEST 20 OPEN PERFS. I.S.I.P. 2991 PSI. F.G. .77, 5 MIN 2364 PSI, 10 MIN 2159 PSI. TREATED PERFS W/ 5000 GALS 15% HCL ACID. PUMPED 3000 LBS 100 MESH IN 1/2 PPG STAGE AND 150650 LBS WHITE 30/50. IN .5#, 1#, 2# AND 3# STAGES. AVG RATE 74.3 BPM, MAX RATE 75.6 BPM. AVG PRESS 4149, MAX PRESS 5134. I.S.I.P. 3605 PSI. F.G. .838. SHUT WELL IN 3981 BBLS TO RECOVER. TURNED WELL OVER TO WIRELINE |
| | 9:15 11:15 | 2.00 | STG08 | 21 | | P | | RIH SET CBP @ 8761' W/ 2900 PSI. PERFORATED STAGE # 8 FROM 8746' TO 8587'. ALL PERFS CORRELATED TO CUTTERS RADIAL CBL, GAMMA RAY, CCL LOG RUN #1 DATED 04-MAY-2015. 15 NET FT. 45 SHOTS. 2 3/4" GUNS, 16 GM CHARGES, 3 SPF, 120 PHASING. STARTING PRESSURE 2900 PSI. FINAL PRESSURE 2800 PSI. TURNED WELL OVER TO FRAC CREW |
| | 11:15 12:45 | 1.50 | STG08 | 35 | | P | | PRESSURE TEST LINES @ 9495 PSI. OPENED UP WELL W/ 2645 PSI. BREAK DOWN STAGE # 8 PERFS @ 3329 PSI, 10 BPM, 10 BBLS PUMPED. EST INJ RATE 36 BPM, 3846 PSI. STEP RATE TEST 23 OPEN PERFS. I.S.I.P. 2971 PSI. F.G. .78, 5 MIN 2698 PSI, 10 MIN 2638 PSI. TREATED PERFS W/ 5000 GALS 15% HCL ACID. PUMPED 2800 LBS 100 MESH IN 1/2 PPG STAGE AND 150160 LBS WHITE 30/50. IN .5#, 1#, 2# AND 3# STAGES. AVG RATE 74.1 BPM, MAX RATE 75.8 BPM. AVG PRESS 4539, MAX PRESS 5655. I.S.I.P. 3277 PSI. F.G. .811. SHUT WELL IN 3948 BBLS TO RECOVER. CLOSED IN WELL CLOSED AND LOCKED ALL FRAC VALVES. CLOSED SURFACE CSG W/ 2 VALVES. |
| | 12:45 16:30 | 3.75 | RDMO | 02 | | P | | RD FRAC EQUIPMENT AND MOVE OFF LOCATION. |
| | 16:30 19:00 | 2.50 | MIRU | 01 | | P | | MOVE IN AND PARTIALLY RU 2" COIL TUBING UNIT SDFN. |
| 5/15/2015 | 6:00 6:30 | 0.50 | CTU | 28 | | P | | CREW TRAVEL HELD SAFETY MEETING RIGGING UP COIL TBG (PINCH POINTS). FILLED OUT JSA. |
| | 6:30 8:30 | 2.00 | CTU | 18 | | P | | FINISHED RIGGING UP COIL TUBING, MADE UP DRILLOUT ASSEMBLY W/ 4 1/8 JZ ROCK BIT. FUNCTION TEST MOTOR. PRESSURE TEST COIL,LUBRICATOR AND FLOWBACK LINES TO 9000 PSI. HELD. |

## 2.1 Operation Summary (Continued)

| Date | Time Start-End | | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|---|
| | 8:30 | 20:30 | 12.00 | CTU | 10 | | P | | RIH PUMPING 1 BPM AND RETURNING 1 BPM, TO LINER TOP @ 8300'. INCRESED RATE TO PUMPING 2.5 BPM RETURNING 3.5 BPM. DRILLED OUT CBPs @ 8761', 9054', 9312', 9588', 9854', 10195', 10528' AND 10550'. CIRCULATE ON BTM FOR 1 HR, TOOH TO LINER TOP CICRCULATE FOR 1HR. TOOH . BUMPED UP. |
| | 20:30 | 22:30 | 2.00 | RDMO | 02 | | P | | LD DRILLOUT ASSEMBLY, RD COIL TUBING, CLOSED TOP HCR VALVE INSTALLED NIGHT CAP. BLEW COIL TBG DRY. TURNED WELL OVER TO FLOWBACK CREW. |
| | 22:30 | 22:35 | 0.08 | FB | 17 | | P | | OPEDED WELL @ 2500 PSI ON 12/64 CHOKE |
| | 22:35 | 6:00 | 7.42 | FB | 19 | | P | | 2200 PSI ON 12/64 CHOKE. RECOVERED 0 MCF, 0 BBLS OIL AND449 BBLS H20. |
| 5/16/2015 | 6:00 | 6:30 | 0.50 | FB | 19 | | P | | HELD SAFETY MEETING ON FLOWBACK PROCEDURES FILLED OUT JSA, |
| | 6:30 | 6:00 | 23.50 | FB | 19 | | P | | 2000 PSI ON 12/64 CHOKE. RECOVERED 0 MCF, 0 BBLS OIL AND 1521 BBLS H20 |
| 5/17/2015 | 6:00 | 6:30 | 0.50 | FB | 28 | | P | | HELD SAFETY MEETING ON FLOWBACK PROCEDURES. FILLED OUT JSA. |
| | 6:30 | 6:00 | 23.50 | FB | 19 | | P | | 1900 PSI ON 12/64 CHOKE. RECOVERED 38 MCF, 49 BBLS OIL AND 915 BBLS H20. |
| 5/18/2015 | 6:00 | 6:30 | 0.50 | FB | 28 | | P | | HELD SAFETY MEETING ON FLOWBACK PROCEDURES. FILLED OUT JSA |
| | 6:30 | 6:00 | 23.50 | FB | 19 | | P | | 1900 PSI ON 12/64 CHOKE. RECOVERED 122 MCF, 176 BBLS OIL AND 557 BBLS H20. |
| 5/19/2015 | 6:00 | 7:30 | 1.50 | WLWORK | 28 | | P | | CREW TRAVEL HELD SAFETY MEETING ON WIRELINE SAFETY (OVERHEAD HAZARDS) FILLED OUT JSA. |
| | 7:30 | 9:45 | 2.25 | WLWORK | 20 | | P | | RU WIRELINE. PRESSURE TEST LUBRICATOR TO 5000 PSI HELD, RIH SET PKR W/ PLUG CATCHER @ 8400' W/ 1900 PSI. SETTING TOOL DIDN'T SHEAR OFF PKR. |
| | 9:45 | 12:30 | 2.75 | WLWORK | 20 | | N | | BLED WELL DOWN TO 1100 PSI. SHUT IN WELL TRIED TO PULL OFF PKR. PRESSED UP TO 1900 ON CSG. TRIED WORKING SETTING TOOL FREE. PULLED OUT OF ROPE SOCKET. BLED DOWN WELL RD WIRELINE<br>RECOVERED 110 MCF, 64 BBLS OIL, 148 BBLS H2O. |
| | 12:30 | 14:30 | 2.00 | WLWORK | 42 | | N | | WAIT ON BRAIDED LINE TRUCK. |
| | 14:30 | 21:00 | 6.50 | BL | 52 | | N | | RU BRAIDED LINE. RIH W/ 3 1/8" OVERSHOT W/ 1 7/16" GRAPPLE, OIL JARS, SPANGE BARS AND WEIGHT BARS, ENGAGED FISH PRESSURED UP CSG TO 1900 PSI. JARRED ON FISH. CAME FREE PULLED OUT W/ FISHING ASSEMEBLY AND FISH (WEIGHT BARS CCL AND SETTING TOOL). RD BRAIDED LINE TRUCK. CLOSED IN WELL. CLOSED AND LOCKED ALL FRAC VALVES. |
| 5/20/2015 | 6:00 | 7:30 | 1.50 | MIRU | 28 | | P | | CREW TRAVEL HELD SAFETY MEETING ON RIGGING UP RIG. FILLED OUT JSA. |
| | 7:30 | 8:30 | 1.00 | MIRU | 01 | | P | | MIRU SERVICE RIG. 200 CSIP BLED DOWN WELL. |
| | 8:30 | 10:00 | 1.50 | WOR | 16 | | P | | ND GOAT HEAD, 5" HCR VALVE, CROSS FLOW, 5" HCR VALVE AND SPOOL. NU 5K BOP ON TOP OF 7" MANUAL FRAC VALVE. |
| | 10:00 | 14:30 | 4.50 | WOR | 39 | | P | | RIH W/ ON OFF TOOL, 5-JTS 2 3/8 L-80 EUE TBG, X-OVER AND 253-JTS 2 7/8 L-80 EUE TBG LATCHED ONTO PKR @ 8385' TBG TALLY LD 1-JT 2 7/8 , SPACED OUT TBG W/ 1-10', 1-2' X 2 7/8 N-80 EUE TBG SUBS. |
| | 14:30 | 16:30 | 2.00 | WOR | 06 | | P | | CIRCULATE WELL WITH 360-BBLS PKR FLUID. |

## 2.1 Operation Summary (Continued)

| Date | Time Start-End | Duration (hr) | Phase | Activity | Sub | OP Code | MD from (ft) | Operation |
|---|---|---|---|---|---|---|---|---|
| | 16:30 18:30 | 2.00 | WOR | 16 | | P | | LANDED TBG W/ 6' 2 7/8 TBG SUB UNDER HANGER W/ BPV. IN TBG HEAD. ND BOP REMOVED BPV. REMOVED HANGER AND 6' TBG SUB. LANDED TBG W/ HANGER AND BPV IN TBG HEAD. NU WELLHEAD. PRESSURE TEST WELLHEAD 5000 PSI. PRESSURE TEST FLOW BACK LINE 4000 PSI. REMOVE BPV. PUMP OUT PLUG @ 2900 PSI. |
| | 18:30 19:30 | 1.00 | RDMO | 02 | | P | | OPENED WELL 1800 PSI ON 14/64 CHOKE. RD RIG. |
| | 19:30 19:30 | 0.00 | FB | 19 | | P | | 2100 PSI ON 14/64 CHOKE. RECOVERED 43 MCF, 140 BBLS OIL AND 185 BBLS H20. |



RECEIVED: Jun. 14, 2015

## Table of Contents